



# Ducted Systems

Professional Grade  
Packaged Cooling Systems



## Installation, Operation and Maintenance Manual DP25

Manufactured by:



AIR INNOVATIONS Syracuse, NY

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# TABLE OF CONTENTS

|                                                                                |       |
|--------------------------------------------------------------------------------|-------|
| Directory of Terms .....                                                       | 5     |
| Illustrations .....                                                            | 6     |
| Receiving, Inspecting and Unpacking the Wine Guardian PRO Ducted Systems ..... | 7     |
| Receiving and Inspecting the Unit.....                                         | 7     |
| Review the Packing Slip to Verify .....                                        | 7     |
| General Description .....                                                      | 8     |
| Standard Specifications .....                                                  | 9     |
| The Wine Guardian PRO Unit Contains .....                                      | 9     |
| Accessories and Optional Equipment.....                                        | 10    |
| Heating Coils .....                                                            | 10    |
| Water Cooled.....                                                              | 10    |
| Duct Collars and Flexible Ducts.....                                           | 10    |
| Extended Compressor Warranty.....                                              | 10    |
| Low Ambient Protection.....                                                    | 10    |
| Condensate Pump .....                                                          | 10    |
| Humidifier and Humidistat.....                                                 | 10    |
| High Ambient .....                                                             | 10    |
| Overview of the Wine Guardian PRO Unit .....                                   | 11-12 |
| Overview Illustration of Water-Cooled System .....                             | 13    |
| Overview Illustration – Vapor Compression System.....                          | 13    |
| Wiring diagrams .....                                                          | 14-16 |
| Terminal Strip Connections.....                                                | 17    |
| Wine Guardian PRO dimensional data .....                                       | 18    |
| Wine Guardian PRO Dimensional Data.....                                        | 18    |
| Wine Guardian PRO SERIES Specifications sheet .....                            | 19    |
| Safety .....                                                                   | 20    |
| Safety Message Conventions.....                                                | 20    |
| Danger .....                                                                   | 20    |
| Warning .....                                                                  | 20    |
| Caution .....                                                                  | 20    |
| Lockout/Tagout Procedure .....                                                 | 21    |
| Safety Considerations.....                                                     | 21    |
| Safety Hazards .....                                                           | 21    |
| Electrical Hazards .....                                                       | 21    |
| Electrical Shock Hazards.....                                                  | 21    |
| Hot Parts Hazards.....                                                         | 21    |
| Moving Parts Hazards.....                                                      | 22    |
| Equipment Safety Interlocks .....                                              | 22    |
| Main Power Switch .....                                                        | 22    |
| Installation .....                                                             | 24    |
| Pre-installation Test .....                                                    | 24    |

|                                                              |              |
|--------------------------------------------------------------|--------------|
| Air Flow Illustration Ducted Model .....                     | 25           |
| <b>Planning the Installation.....</b>                        | <b>26</b>    |
| Addressing Items in the Planning Process .....               | 26           |
| Performing a Pre-installation Check .....                    | 26           |
| Locating the Unit.....                                       | 26           |
| Grilles.....                                                 | 27           |
| Reducing Noise from the Unit.....                            | 27           |
| Installing the Unit Outdoors.....                            | 27           |
| <b>Mounting the Unit .....</b>                               | <b>28</b>    |
| Floor Mounting .....                                         | 28           |
| Wall Mounting .....                                          | 28           |
| Ceiling Mounting .....                                       | 28           |
| Installing the Condensate Drain Connection.....              | 28           |
| Installing the Drain Line .....                              | 29           |
| Priming the Drain Trap.....                                  | 29           |
| <b>Wiring the Unit for Power.....</b>                        | <b>29-30</b> |
| <b>Installing the Ductwork and Grilles .....</b>             | <b>31</b>    |
| Location of Supply and Return Grilles .....                  | 31           |
| General Duct Recommendation.....                             | 32           |
| Using Ductwork.....                                          | 32           |
| Cold Air to/from cellar or room.....                         | 32           |
| Warm Air to/from Condenser .....                             | 32           |
| <b>Typical Mounting Arrangements.....</b>                    | <b>33</b>    |
| <b>Duct Adapter Sizes .....</b>                              | <b>34</b>    |
| Ducting Options .....                                        | 34           |
| Single Outlet Duct Installation .....                        | 34           |
| <b>Inspection and Start-up Checklists .....</b>              | <b>35</b>    |
| Receiving and Inspecting.....                                | 35           |
| Handling and Installing.....                                 | 35           |
| Starting-up the Unit.....                                    | 35           |
| <b>Starting Up and Operating the Wine Guardian PRO .....</b> | <b>36</b>    |
| Turn on the Unit .....                                       | 36           |
| Testing the Fan .....                                        | 36           |
| Running the Unit.....                                        | 36           |
| Cycling the Unit.....                                        | 37           |
| Setting the Thermostat.....                                  | 37           |
| Regulating the Wine Cellar Temperature.....                  | 37           |
| Changing the Air Flow Direction .....                        | 37           |
| <b>Maintenance .....</b>                                     | <b>38</b>    |
| General .....                                                | 38           |
| Cleaning the Filters .....                                   | 39           |
| Cleaning the Condensate Drain System.....                    | 39           |
| Cleaning the Humidifier (optional).....                      | 39           |

|                                                                               |           |
|-------------------------------------------------------------------------------|-----------|
| Heating Coil .....                                                            | 39        |
| Low Ambient .....                                                             | 40        |
| <b>Maintenance Schedule .....</b>                                             | <b>40</b> |
| Monthly .....                                                                 | 40        |
| Yearly .....                                                                  | 40        |
| <b>Troubleshooting.....</b>                                                   | <b>41</b> |
| Typical Start-up Problems .....                                               | 41        |
| Unit Does Not Start-up.....                                                   | 41        |
| Power Switch Light is Off.....                                                | 41        |
| Power switch light is on and the thermostat light is off .....                | 41        |
| Power switch light is on and the thermostat light is on .....                 | 41        |
| Unit is operating and blows evaporator air, .....                             | 42        |
| Problems Controlling Cellar Temperature.....                                  | 42        |
| Cellar Temperature too cold (below 51°) when unit is running .....            | 42        |
| Room Temperature is too cold (below 51°) when unit is not running .....       | 42        |
| Problems Controlling Cellar Humidity .....                                    | 43        |
| Humidity too low or supply air is too cold, without optional humidifier ..... | 43        |
| Humidity too low, without optional humidifier .....                           | 43        |
| Humidity too low with optional humidifier .....                               | 43        |
| Humidity too high when unit is running but not cooling.....                   | 43        |
| Humidity too high when unit is not running .....                              | 43        |
| Humidity too high when unit is running and cooling .....                      | 44        |
| Other Miscellaneous Problems .....                                            | 44        |
| Unit operates but the power switch light is not ON .....                      | 44        |
| Unit is leaking water.....                                                    | 44        |
| Unit is running properly, but the sound of the unit is objectionable.....     | 44        |
| <b>High Pressure Switch has Shut Down the Unit .....</b>                      | <b>45</b> |
| Instructions to Reset High Pressure Switch .....                              | 45        |
| <b>Advanced Troubleshooting .....</b>                                         | <b>46</b> |
| Evaporator coil is freezing .....                                             | 46        |
| High pressure switch keeps tripping .....                                     | 46        |
| Unit cycles on and off more than 8 times/hr.....                              | 46        |
| High pitched or loud rubbing noise, clanking or vibration .....               | 46        |
| Replacing the blowers .....                                                   | 46        |
| <b>Warranty .....</b>                                                         | <b>47</b> |
| <b>Labor Allowance for Warranty Repairs .....</b>                             | <b>48</b> |
| <b>Contact and Warranty Information .....</b>                                 | <b>49</b> |
| Contact Information .....                                                     | 49        |
| Warranty and Warranty Procedure .....                                         | 49        |

## Directory of Terms

**Ambient Air** – The surrounding area outside the cellar such as a room, basement, garage or outdoors.

**CFM** – Cubic feet per minute. A unit of measurement for the amount of air handled by the fan.

**Condensate / Condensation** – The water formed out of the air when it is cooled below a certain temperature (called dew point). Often referred to as “sweating” on pipes and cold surfaces. This water collects at the bottom of the evaporator or cooling coil and drains out of the unit through the drain line.

**Condenser (Heat Rejection) Section / Coil** – The Condenser Section uses the compressor, condenser coil and fan to remove heat from the refrigerant to the ambient air *outside* the cellar or room. The word condenser refers to the condensation of the refrigerant from gas to liquid phase.

**CSA/ETL** – Canadian Standard Association/Electric Testing Laboratory

**Exhaust Air** – The air leaving the evaporator or condenser section of the Wine Guardian PRO unit.

**Evaporator (Cooling) Section / Coil** – The Evaporator Section uses the cooling coil and the fan to remove heat from the air *inside* the cellar or room to the refrigerant, cooling the air and condensing moisture out of the air. The word evaporator refers to the evaporation of the refrigerant from liquid to gas phase in the coil. The Evaporator Section is connected to or inside the wine cellar.

**Flexible Duct** – Round ducts with steel reinforced plastic liners, a layer of insulation and an outer plastic layer used to convey the air from the unit to the cellar or ambient space.

**Grille or Diffuser** – Inlet or outlet plates to direct the airflow or protect the inside of the unit.

**Heat Gain / Loss** – The amount of cooling or heating expressed in watts transferred between the wine cellar and the ambient space. The Wine Guardian PRO must offset this load.

**Inlet Air** – The air entering the evaporator and condenser sections of the Wine Guardian PRO unit.

**Inlet Air** – The air returning from the wine room to the Wine Guardian PRO fan coil.

**I.D.** – Inside diameter

**NEC** – National Electrical Code

**O.D.** – Outside diameter

**Psig Pounds** – Force per square inch gauge

**NEC** – National Electrical Code

**Recovery** – The amount of cooling the unit does to return the cellar to its set point temperature after some new load is introduced, such as people or new cases of warm wine entering the cellar or room.

**Return Air** - The air leaving the cellar and returning to the inlet of the evaporator coil.

**SP** – Static pressure. Unit of measurement (inches of water column) of the pressure of the air handled by the fan.

**Set Point** – The desired temperature or humidity set on the thermostat or humidistat.

**Supply Air** - The air entering the cellar or room from the discharge of the evaporator coil.

[Illustrations](#)

Overview of the Wine Guardian PRO system .....11

Overview – Wine Guardian PRO system .....12

Overview – Wine Guardian PRO Water Cooled system .....13

Wiring diagrams DP25 ..... 14-16

Wine Guardian PRO dimensional data .....18

Wine Guardian PRO specifications sheet .....19

Airflow illustration.....25

## Receiving, Inspecting and Unpacking the Wine Guardian PRO Ducted Systems

### Receiving and Inspecting the Unit

***NOTE: Wine Guardian PRO units are factory assembled and tested prior to shipment.***

Wine Guardian PRO units are shipped in individual corrugated boxes.

- ✓ Lift at the designated handhold locations only or fully support from underneath. A shipment may include one or more boxes containing accessories.
- ✓ Before opening the container, inspect the packing crates or boxes for obvious signs of damage or mishandling.
- ✓ Write any discrepancy or visual damage on the bill of lading before signing.
- ✓ Inspect all equipment for any sign of damage caused during transit.
- ✓ Report all visual or concealed damage to the carrier and file a claim immediately.
- ✓ Thoroughly inspect the contents for any visible damage or loose parts.

***IMPORTANT***

***If this procedure is not followed, the shipping company may reject the claim and the consignee may suffer the loss. Do not return the shipment to the factory.***

### Review the Packing Slip to Verify

- ✓ Model number
- ✓ Factory installed options
- ✓ Unit accessories

If any items listed on the packing slip do not match your order information, contact the place of purchase immediately.

## General Description

**Refer to overview illustrations starting on page 12**

The Wine Guardian PRO cooling units are professional grade, American manufactured, self-contained climate control units designed specifically for the storage and preservation of wine, fur, musical instruments, and data rooms and other specialty environments. They are designed for easy installation and operation. Wine Guardian PRO uses R-134a refrigerant and the units are tested at the factory and shipped as a single package. All components are of a high quality, standard commercial grade. The entire units are approved by ETL according to UL 1995 and CSA safety standards. All wiring complies with NEC. Each unit is furnished with a sealed, UL-approved power cord and plug.

The Wine Guardian PRO systems come in horizontal models, are completely self-contained and includes either an integral air cooled or water-cooled condenser. The units are functionally divided into two sections, the evaporator (or cooling section) and the condenser (or heat rejection section). Each section contains a coil to add or remove heat and a fan to move the air through the coil and into or out of the cellar or adjacent space. The Wine Guardian PRO units are designed to be used as a remotely mounted unit with external ductwork connections.

Air first passes through the cooling coil and is cooled by the refrigerant inside the coil. This causes any excess humidity in the air to condense and be captured in the drain pan and piped outside the unit. Air then enters the fan where it is pressurized and discharged out of the unit. Heating coils are located between the cooling coil and the fan. These coils heat the air to prevent low temperatures in the cellar. The thermostat, located in the cellar, turns on the cooling or heating as needed to maintain its setpoint. It does not allow the cooling and heating to be on at the same time.

The compressor and condenser sections are activated whenever the unit is cooling. The condenser fan draws air from the surrounding or ambient space either directly or through a duct. The air is first drawn through a filter to remove any airborne dust particles to keep the coil clean. The air flows through the condenser coil where it absorbs heat from the refrigerant in the coil. The air is then discharged out of the unit by the condenser fan.

The water-cooled ducted system requires cooling water to be piped to the unit for proper operation. The cooling water absorbs the refrigerant heat through the unit's water-cooled condenser coil. Warm water is then directed out of the unit back to the cooling water system or to a drain.

### **IMPORTANT**

***The air exhaust from the condenser fan on air-cooled units is hot and will be 25 to 35 degrees F above the entering temperature. This may cause overheating problems in the summer months, especially with high humidity. Exhaust the hot air to the outside. In the winter, this heated air can help to heat the surrounding space.***



## Standard Specifications

### **IMPORTANT**

***Design and specifications are subject to change without notice***

### **The Wine Guardian PRO Unit Contains**

- ✓ A thermal expansion valve to control the flow of refrigerant into the evaporator coil
- ✓ A filter dryer to keep the refrigerant clean and free of contaminants
- ✓ A sight glass to observe the level of refrigerant
- ✓ A manual reset high pressure switch to protect the system from high pressures
- ✓ An auto reset low pressure switch to protect the system from low pressures
- ✓ The unit uses only R-134a refrigerant
- ✓ A built-in condensate drain trap. (no external trap is required)
- ✓ 24 volt control connection for use with today's smart thermostats

The Wine Guardian PRO meets or exceeds its rated capacities for total BTU/H and CFM at design cellar conditions and external static pressures. Both the evaporator and condenser fans are capable of rated CFM against the external static pressure imposed by recommended ductwork. Both fans are motorized impeller plug fans, statically and dynamically balanced, and use permanently lubricated, direct drive motors that require no maintenance.

All exterior framing of the Wine Guardian PRO is powder coated 0.080" gauge aluminum to prevent rust and corrosion. All coils are either copper tubes with aluminum fins or aluminum tubes with aluminum fins. The unit uses an external drain to remove excess moisture and not reintroduce it into the cellar or ambient space. Removable, multiple access doors are provided to facilitate cleaning and maintenance, duct connections, and access to components and wiring.

The condenser coils have pre-filters on the inlet to prevent dust and dirt from fouling the coils, thereby reducing capacity. Each unit has at least three discharge outlets on both the evaporator and the condenser coils to facilitate custom installations. Water-cooled units have copper straight tube connections for both cooling water inlet and outlet.

Each unit is provided with a terminal strip for connection to most common 24-volt thermostats, smart devices or building management systems to control cooling, heating and humidification. The unit does not ship with a thermostat.

Compressors are self-lubricating, permanently sealed, hermetic reciprocating type compressors, with internal overload protection and capacitor start with a minimum of one-year manufacturer's warranty and an optional five-year warranty. Compressors are mounted on rubber-in-shear isolators to reduce noise and vibration.

Electric power is supplied by a single factory furnished cord and plug.

## Accessories and Optional Equipment

### **Heating Coils**

Heating coils are optional and require no additional power source. The electric heating feature is factory installed and includes primary and secondary over-temperature protection devices per UL and NEC.

### **Water Cooled Option**

A water-cooled option is available that uses a tube-in-tube heat exchanger in place of the condenser coil and fan. Waste heat from the refrigerant is transferred to the water. A two-way control valve is used to regulate the flow of water to maintain head pressure.

### **Duct Collars and Flexible Ducts**

Ducting for the Wine Guardian PRO is sold in kits by size for each unit. Each kit contains two adapter collars, one 25-foot length of round flexible duct and two straps. The number of duct kits needed depends on the layout. The size of the kit depends on the model Wine Guardian PRO selected. Follow installation instructions carefully. Poorly or incorrectly installed ducts can degrade the performance of your unit dramatically.

### **Extended Compressor Warranty**

The Wine Guardian PRO uses only the best commercially available compressors on the market. However, since the compressor is the single most expensive component in the unit, it is recommended that you purchase the extended warranty option.

### **Low Ambient Protection**

A factory installed Low Ambient Protection feature is standard on the Wine Guardian PRO units. This feature controls the condenser fan operation based on head pressure and heats the oil reservoir. The Low Ambient Option (LAO) is recommended whenever the condenser section is exposed to air temperatures below 40 degrees F. This can occur if the unit is placed in a garage or under an outdoor canopy, or if the unit is located inside a heated space but the condenser air is ducted in from the outside.

### **Condensate Pump**

An optional Wine Guardian PRO automatic condensate pump is available to pump the excess condensate water to a sink or remote drain. It requires a separate 120-volt electrical outlet.

### **Humidifier and Humidistat**

Another popular option for the Wine Guardian PRO is a humidifier. The humidifier is available as a freestanding unit powered by the Wine Guardian PRO system, as freestanding unit with its own power cord and humidistat or as an integrated unit that bolts to the side of any Wine Guardian PRO ducted system. The Wine Guardian PRO humidifier requires a water supply and drain for operation.



**CAUTION**



**CAREFULLY FOLLOW THE INSTALLATIONS INSTRUCTIONS INCLUDED WITH THE HUMIDIFIER.  
REFER TO THE INSTRUCTIONS CONTAINED IN THE BOX FOR THE HUMIDISTAT.**

### **High Ambient**

A factory installed high ambient feature is standard (on DP25 models only) that makes the Wine Guardian PRO capable of exposure to high ambient temperatures. The high ambient feature consists of high output fan and condenser coil. The high ambient option is recommended whenever the condenser section is exposed to air temperatures above 100 degrees F to a maximum of 120 degrees F.

## Overview of the Wine Guardian PRO Unit

**Refer to overview illustrations starting on page 12**

**Chassis** – The chassis is constructed of aluminum with a powder coated finish for corrosion protection and an attractive, maintenance-free appearance. The access panels are made of UL flame rated material, and mounted via easy to turn fasteners. Areas in contact with cold temperatures are lined with insulation to prevent condensation, such as the duct adapters.

**Condensing Section** – Ambient air is circulated through the condenser section by a direct drive, permanently lubricated, motorized impeller blower. This section also contains the compressor and the electrical controls. If the water-cooled option is purchased, a heat exchanger is used in place of the condenser coil and blower.

**Evaporator Section** – Cellar air is circulated through the evaporator section by another blower the same as above. The large evaporator coil face area eliminates condensate carry-over, reduces air pressure drop and optimizes heat transfer. A drain pan is located directly below the coil to capture condensate and is fabricated from aluminum to prevent rust and corrosion. The electric heating coil, if ordered, is factory installed between the evaporator coil and the blower, and is complete with contactor(s) and limit controls.

**Electrical Controls** – Most of the electrical components and controls are located in a separate area accessible on the side of the unit. All wiring is in accordance with the NEC. Wires are numbered and color coded to match the wiring diagrams.

**Factory Tested** – All Wine Guardian PRO units are factory run-tested and checked for operational performance.

**Filters** – Nominal 1 inch thick filters are provided on the condenser inlet to protect the coils from dust and dirt. These filters are washable and reusable.

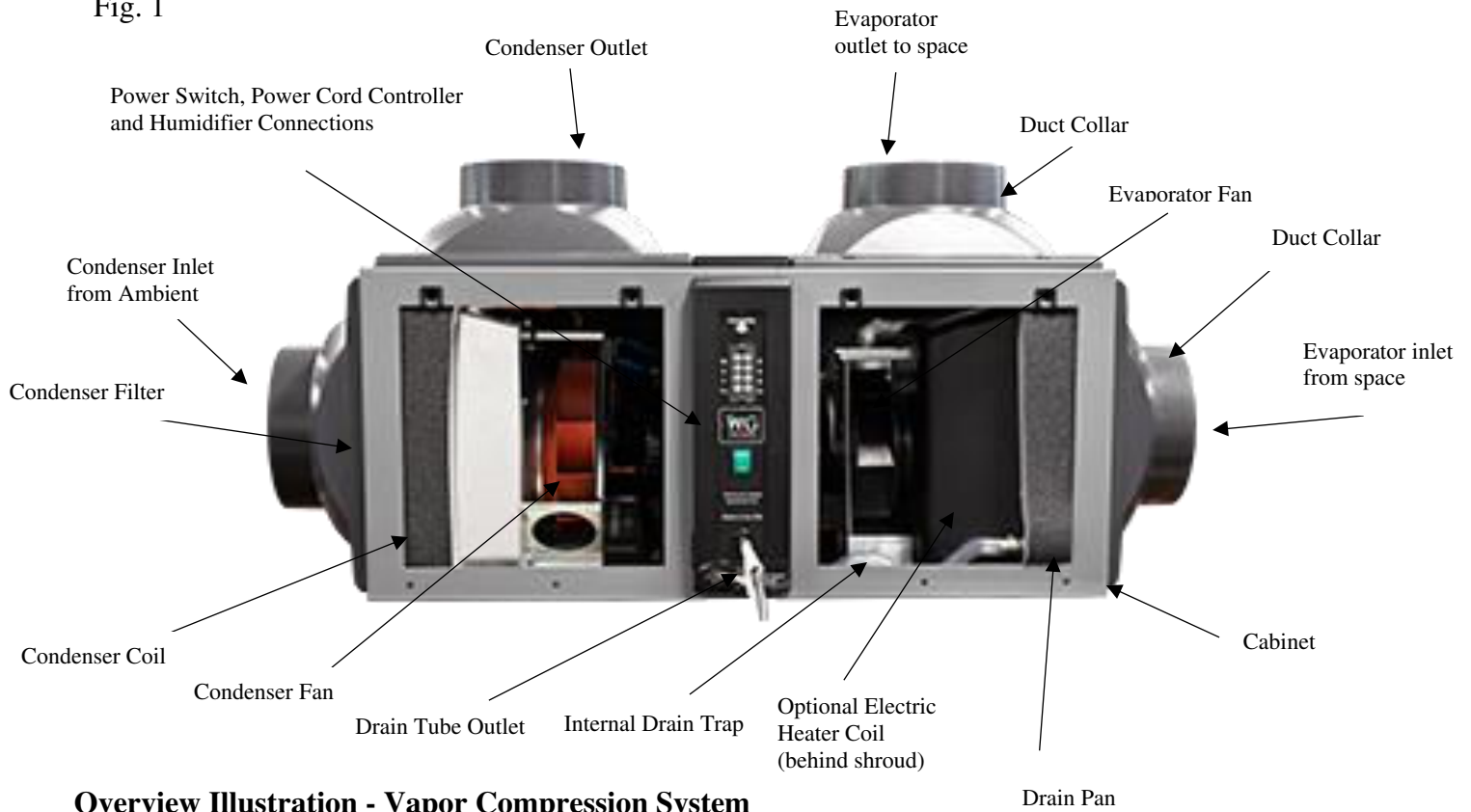
**Humidity Option** – The optional humidifier comes fully assembled and tested for field installation onto the Wine Guardian PRO without any additional electrical power wiring. It automatically adds moisture into the cellar by the evaporation of water over a distribution pad. The same Wine Guardian PRO thermostat controller supplied with the Wine Guardian PRO unit automatically controls humidity as well as temperature.

**Internal Drain Trap** - Water condensate from the evaporator coil fills the trap and forms a seal to prevent air from being drawn back through the drain tube. This allows the drain pan to drain freely. No external trap is required.

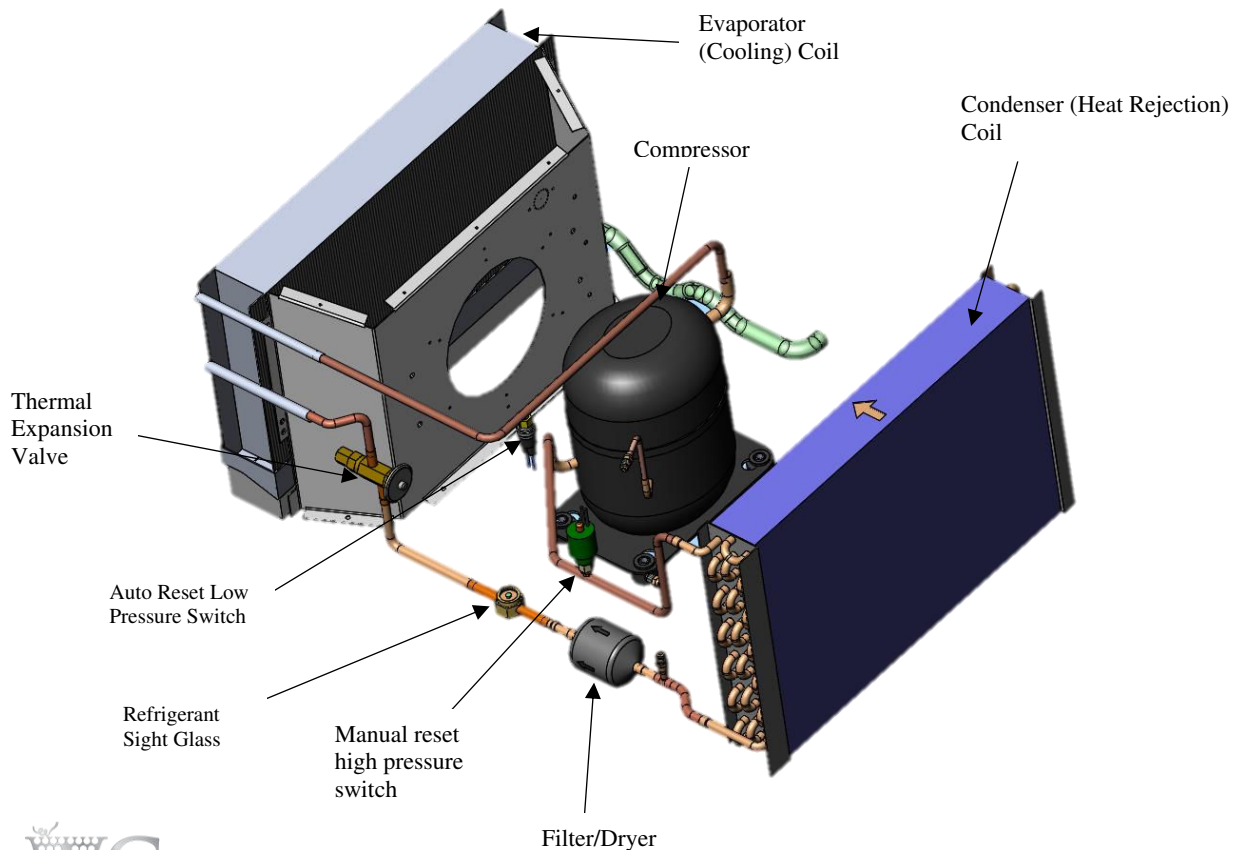
**Refrigerant Circuit** – The factory charged circuit includes a thermal expansion valve with an external equalizer, sight glass with moisture indicator, a filter dryer, an automatic low pressure switch, and a manual reset high pressure switch. For the low ambient option, an automatic pressure switch controls the operation of the condenser blower and a heating element is added to the compressor oil reservoir. **See Fig 1 - Refrigeration Illustration on next page.**

## Overview Illustration of the Wine Guardian PRO Unit

Fig. 1

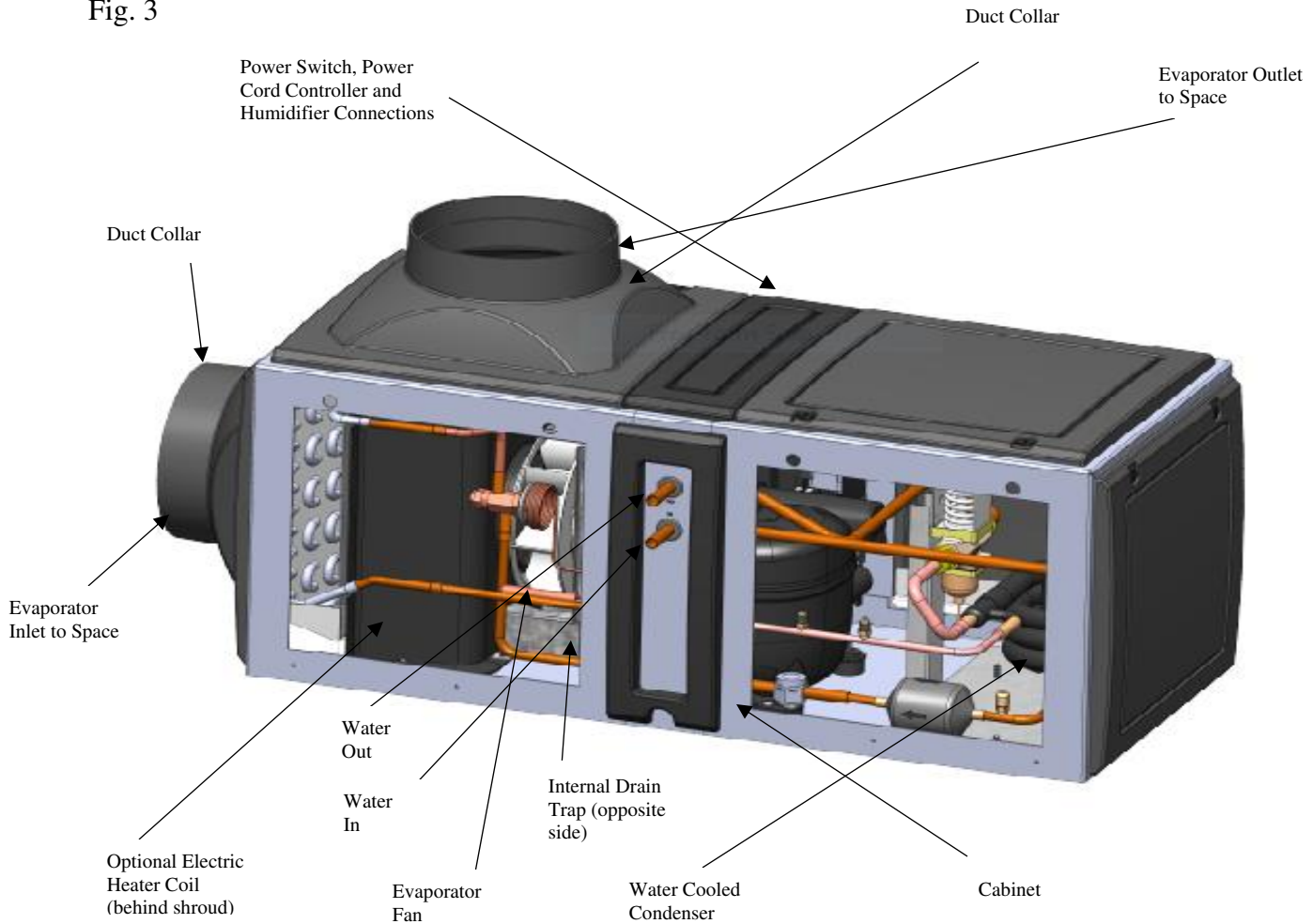


## Overview Illustration - Vapor Compression System



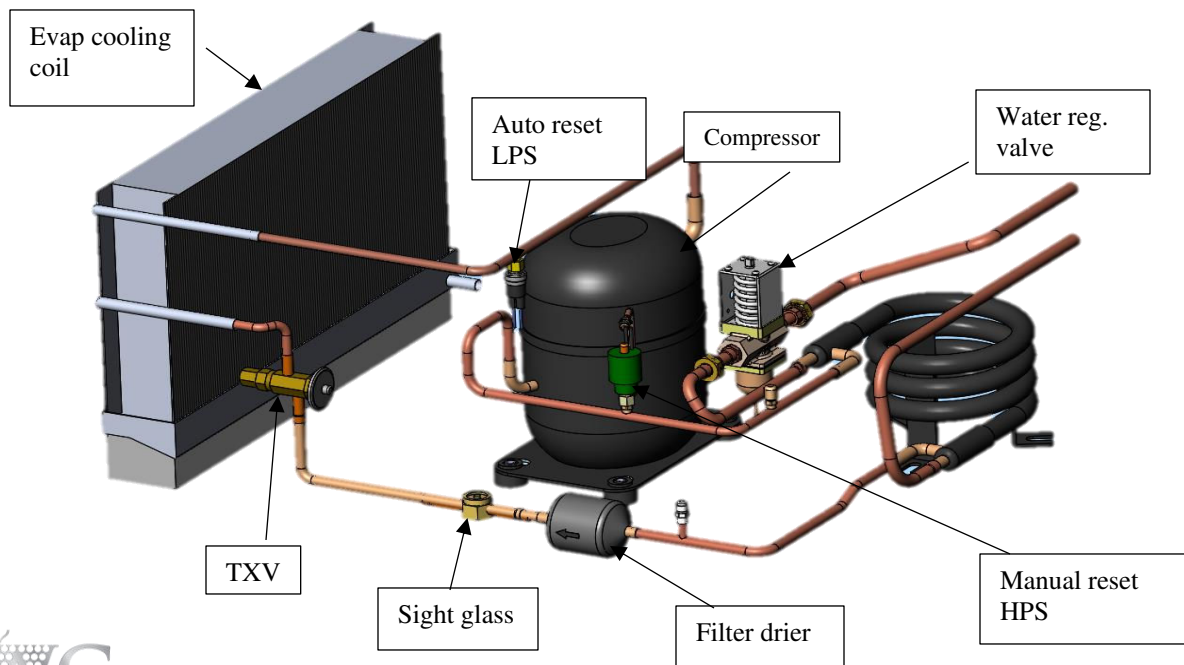
## Overview Illustration of Water-Cooled System

Fig. 3



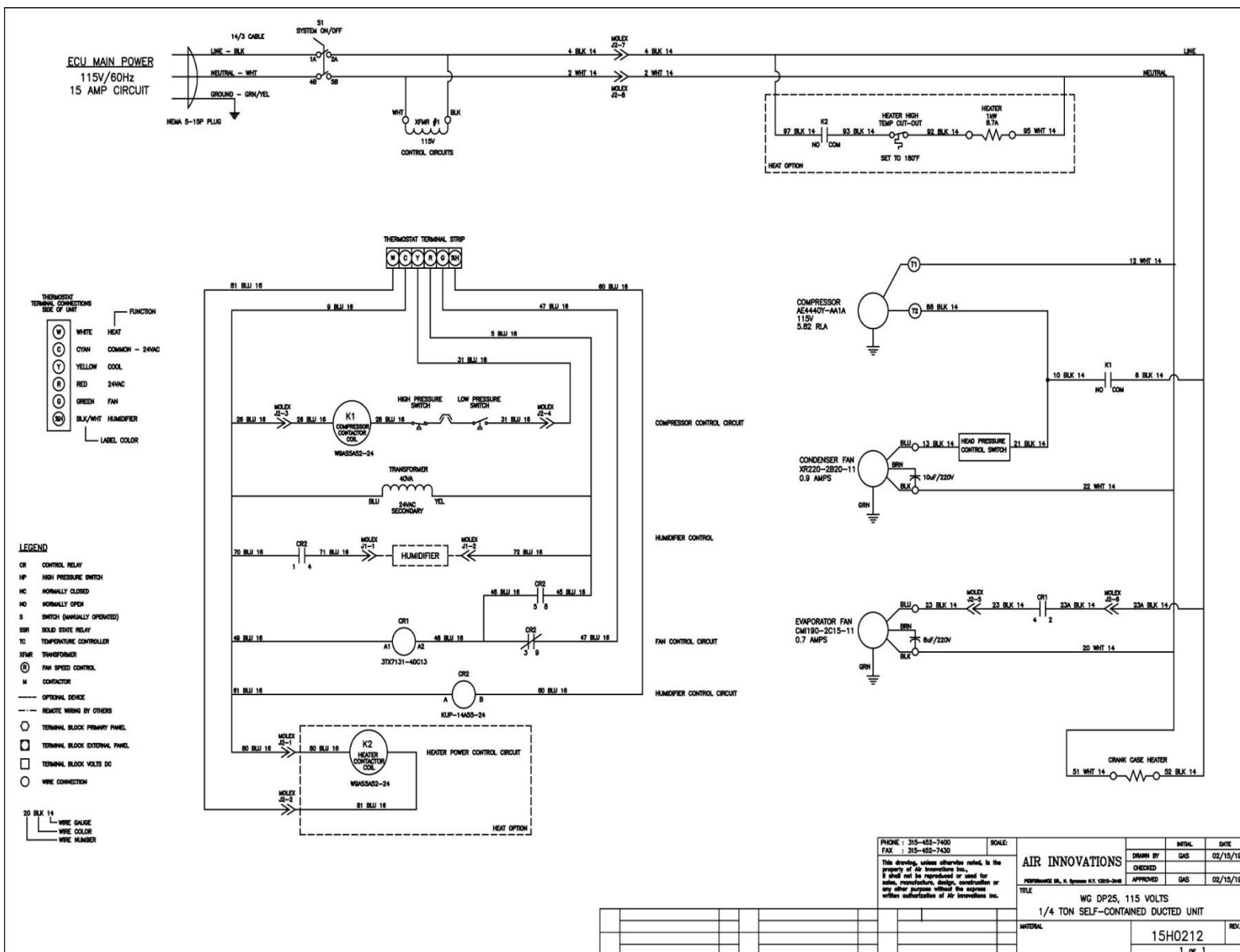
## Overview Illustration – Vapor Compression System

Fig. 4

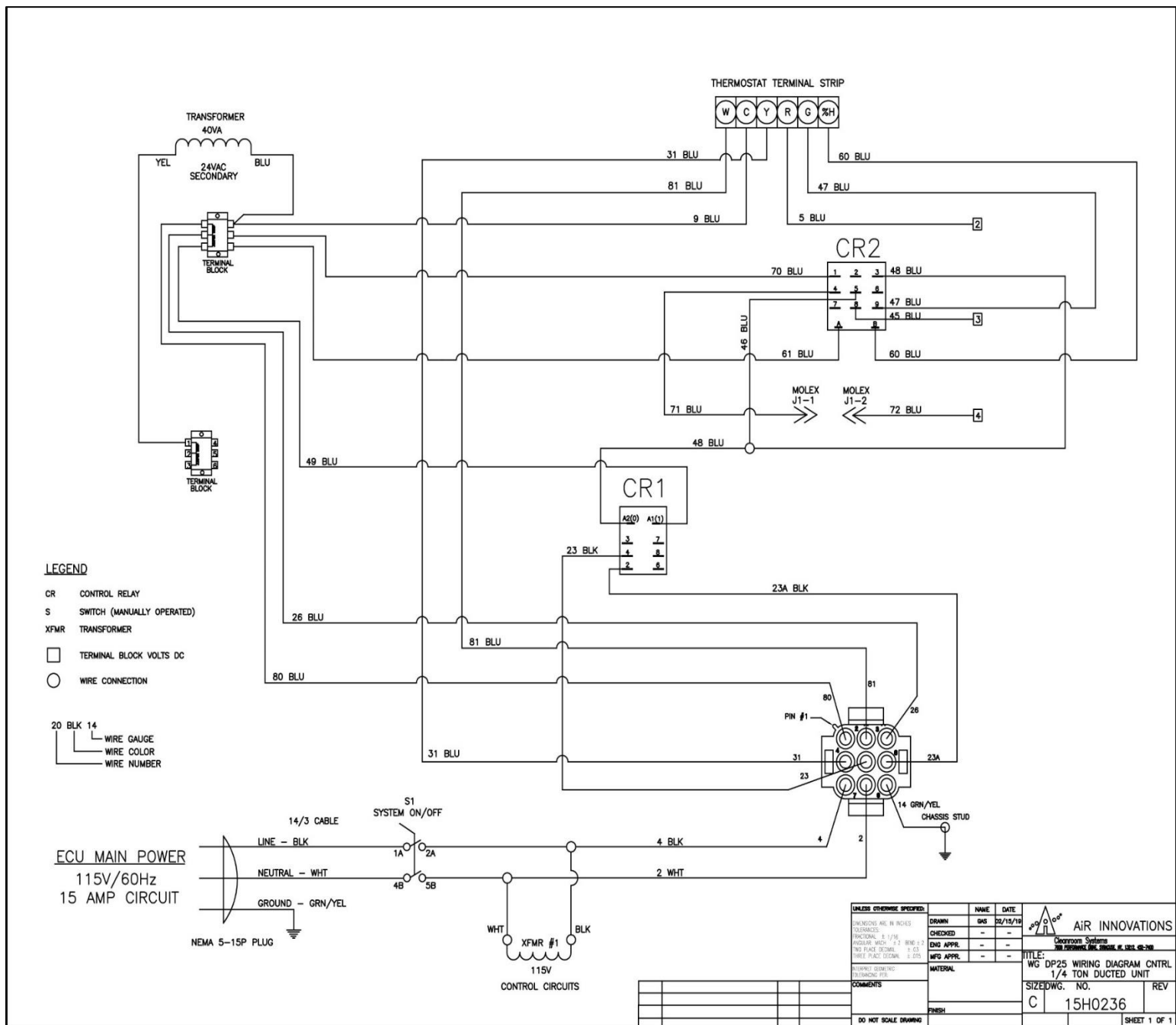


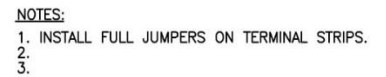
# Wiring diagrams

Fig.5









|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |



## ***Terminal Strip Connections***



W = Heat

C = 24 Volt AC Common

Y = Cool

R = 24 Volt AC Power

G = Fan

% = Humidity Connection

Split system only:

Yy = Split system condensing unit connection

Cc = Split system condensing unit connection

## Wine Guardian PRO dimensional data

Fig. 9

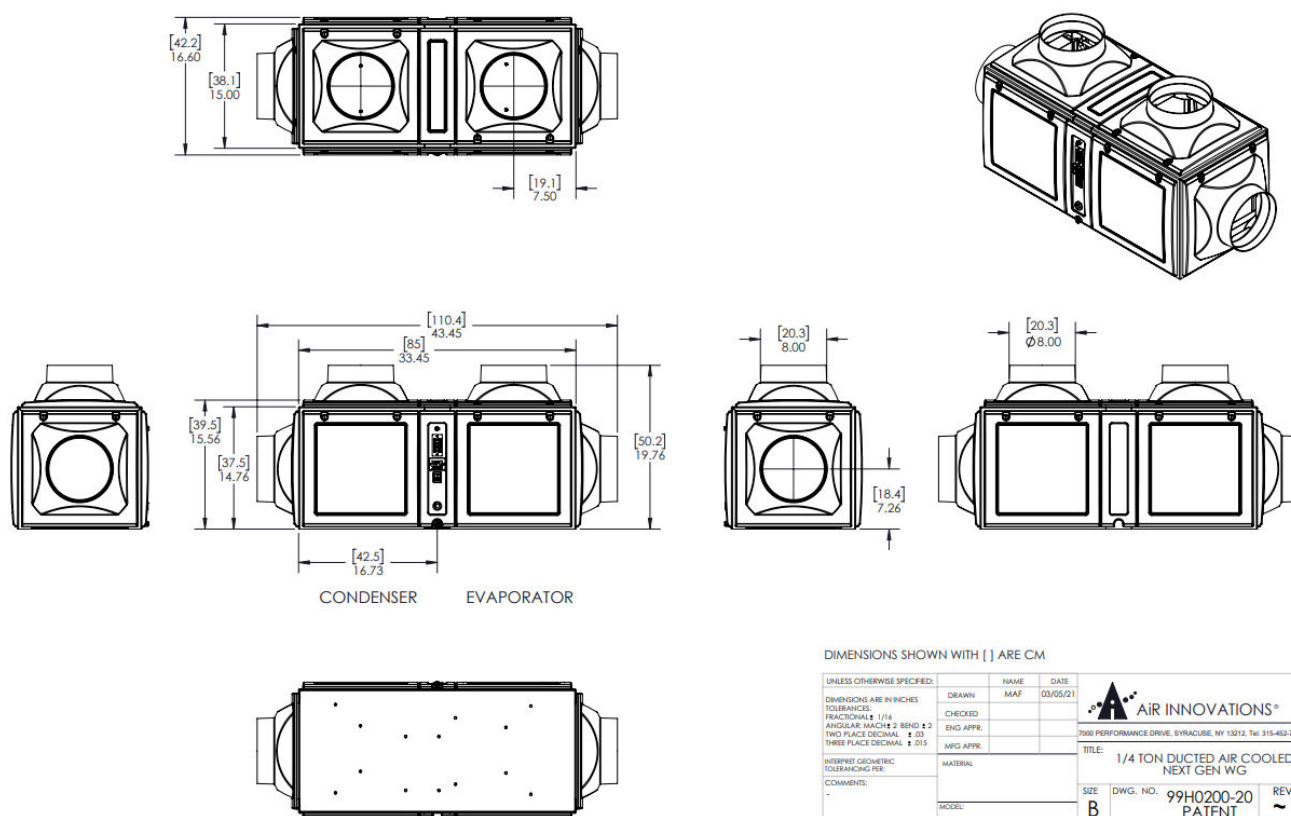


Table 1

## Wine Guardian PRO Dimensional Data

| Model Number                                |        | DP25  |  |  |  |
|---------------------------------------------|--------|-------|--|--|--|
|                                             |        |       |  |  |  |
| Dimensions                                  |        |       |  |  |  |
| Depth (with access panels)                  | Inches | 16.60 |  |  |  |
| Height (with duct adapter)                  | Inches | 19.76 |  |  |  |
| Width/Length (with duct adapter)            | Inches | 43.45 |  |  |  |
| Evap. discharge location (from chassis end) | Inches | 7.50  |  |  |  |
| Cond. discharge location (from chassis end) | Inches | 7.50  |  |  |  |
| Duct opening                                | Inches | 8     |  |  |  |
| Drain outlet location (from chassis end)    | Inches | 16.73 |  |  |  |
| Water Out OD (water-cooled)                 | Inches | .625  |  |  |  |
| Water In OD (water-cooled)                  | Inches | .625  |  |  |  |
| Weight                                      | lbs    | 80    |  |  |  |

## Wine Guardian PRO SERIES Specifications sheet

Fig.10

|                                                |               |  |                                                         |
|------------------------------------------------|---------------|--|---------------------------------------------------------|
| <b>Model Number</b>                            |               |  | <b>DP25</b>                                             |
| <b>Power Requirements</b>                      | volt/phase/hz |  | 115/1/60                                                |
| <b>Performance (57°/55%RH)</b>                 |               |  |                                                         |
| Nominal Compressor                             | HP            |  | 0.33                                                    |
| Net Cooling Capacity*                          |               |  | Total/Sensible                                          |
| @60 Deg F condenser inlet air                  | BTUH          |  | 4520/3050                                               |
| @70 Deg F condenser inlet air                  | BTUH          |  | 4300/2915                                               |
| @80 Deg F condenser inlet air                  | BTUH          |  | 3760/2715                                               |
| @90 Deg F condenser inlet air                  | BTUH          |  | 3540/2580                                               |
| @110 Deg F condenser inlet air                 | BTUH          |  | 3260/2400                                               |
| @120 Deg F condenser inlet air                 | BTUH          |  | 3000/2260                                               |
| <b>Performance (80°/50%RH)</b>                 |               |  |                                                         |
| Nominal Compressor                             | HP            |  | 0.33                                                    |
| Net Cooling Capacity*                          |               |  | Total/Sensible                                          |
| @60 Deg F condenser inlet air                  | BTUH          |  | 5980/4000                                               |
| @70 Deg F condenser inlet air                  | BTUH          |  | 5570/3780                                               |
| @80 Deg F condenser inlet air                  | BTUH          |  | 5080/3660                                               |
| @90 Deg F condenser inlet air                  | BTUH          |  | 4425/3500                                               |
| @110 Deg F condenser inlet air                 | BTUH          |  | 4070/3000                                               |
| @120 Deg F condenser inlet air                 | BTUH          |  | 3780/2840                                               |
| <b>Controls</b>                                |               |  |                                                         |
| Type                                           |               |  | 24 Volt Control - (Thermostat by Others)                |
| <b>Evaporator Section</b>                      |               |  |                                                         |
| Fan Motor Size                                 | Watts         |  | 75                                                      |
| Rated Air Flow (free blow)                     | CFM           |  | 245                                                     |
| Rated Air Flow @ pressure loss                 | CFM           |  | 200 @ 0.10" wc                                          |
| <b>Air-cooled Condenser Section</b>            |               |  |                                                         |
| Fan Motor Size                                 | Watts         |  | 75                                                      |
| Rated Air Flow (free blow)                     | CFM           |  | 245                                                     |
| Rated Air Flow @ pressure loss                 | CFM           |  | 200 @ 0.10" wc                                          |
| <b>Water-cooled Condenser Section (option)</b> |               |  |                                                         |
| Water usage at 40 Deg F rise                   | GMP           |  | 0.30                                                    |
| Pressure drop                                  | PSI           |  | 0.40                                                    |
| Pipe connection size (in/out) O.D.             | Inches        |  | 0.50                                                    |
| <b>Heat</b>                                    |               |  |                                                         |
| Type                                           |               |  | Electric                                                |
| Capacity                                       | Watt/BTUH     |  | 1000/3400                                               |
| <b>Humidifier (Option)</b>                     |               |  |                                                         |
| Type                                           |               |  | Removable drip pad with integral fan                    |
| Capacity - water temp of 60 Deg F              | lbs./hr       |  | 0.42                                                    |
| Capacity - water temp of 90 Deg F              | lbs./hr       |  | 0.97                                                    |
| Capacity - water temp of 100 Deg F             | lbs./hr       |  | 1.11                                                    |
| <b>Electrical Requirements</b>                 |               |  |                                                         |
| Current Draw - Cooling mode                    | Amps          |  | 7.1                                                     |
| Current Draw - Heating mode                    | Amps          |  | 9.4                                                     |
| Minimum Circuit amps (heat / no heat)          | Amps          |  | 11.6/8.6                                                |
| Optional Low Ambient                           | Amps          |  | 0.4                                                     |
| Optional High Ambient                          | Amps          |  | 0.2                                                     |
| Optional Humidifier                            | Amps          |  | 0.4                                                     |
| <b>Cabinet</b>                                 |               |  |                                                         |
| Construction                                   |               |  | Aluminum chassis & UL rated plastic panels              |
| Finish                                         |               |  | Gray metal epoxy powder coat/textured PVC acrylic blend |
| Weight                                         | lbs.          |  | 80                                                      |
| Dimensions (inches)                            | Width         |  | 33.45                                                   |
|                                                | Depth         |  | 16.6                                                    |
|                                                | Height        |  | 15.56                                                   |
| <b>Condensate Drain connection (ID)</b>        | inches        |  | .50"                                                    |
| <b>Agency Approval(s)</b>                      | ETL           |  | UL 1995/CSA C22.2                                       |

1. Reduce capacity by 3% for each 10% reduction in evaporator airflow.
2. Wine Guardian reserves the right to make changes to this document without prior notice at its sole discretion.
3. All rating at sea level.

## Safety

Before installing or maintaining the Wine Guardian PRO unit do the following:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.

### **IMPORTANT**

***The equipment described in this manual uses electricity. Be sure to follow the safety procedures outlined in the Wine Guardian PRO Manual.***

## Safety Message Conventions

Safety messages contained in this manual, **DANGER**, **WARNING**, and **CAUTION** are bold and highlighted in red for quick identification.

### *Danger*

A Danger message indicates an imminently hazardous situation which, if not avoided, results in death or serious injury. Messages identified by the word **DANGER** are used sparingly and only for those situations presenting the most serious hazards.

Following is a typical example of a Danger message as it could appear in the manual

 **DANGER**   
**HIGH VOLTAGE - RISK OF SERIOUS INJURY OR DEATH**  
**High voltages are present in the cabinets.**  
**Before opening panels turn off all power.**  
**Use the Lockout/Tagout procedure.**

### *Warning*

A Warning message indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Following is a typical example of a Warning message as it could appear in the manual:

 **WARNING**   
**RISK OF PERSONAL INJURY OR DAMAGE TO EQUIPMENT**  
**Modification to the equipment may cause injury.**

### *Caution*

A Caution message indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practice.

Following is a typical example of a Caution message as it could appear in the manual:



**RISK OF PERSONAL INJURY OR DAMAGE TO EQUIPMENT**  
**Improper installation may result in the equipment malfunctioning and a safety hazard.**  
**Read all of the installation instructions before installing the Wine Guardian PRO SERIES unit.**

## **Lockout/Tagout Procedure**

1. Turn off the power switch (indicator light should be off)
2. Unplug the unit from the electrical outlet and cover the outlet to prevent accidentally plugging in the unit.

## **Safety Considerations**

The equipment covered by this manual is designed for safe and reliable operation when installed and operated within its designed specifications. To avoid personal injury or damage to equipment or property when installing or operating this equipment, it is essential that qualified, experienced personnel perform these functions, using good judgment and safe practices. See the following cautionary statements.

Installation and maintenance of this equipment is to be performed only by qualified personnel who are familiar with local codes and regulations, and are experienced with this type of equipment.

## **Safety Hazards**

Exposure to safety hazards is limited to maintenance personnel working in and around the unit. When performing maintenance, always use the Lockout/Tagout procedure, which is described in this chapter. Observe the maintenance safety guideline in the Wine Guardian PRO Manual.

### *Electrical Hazards*

Working on the equipment may involve exposure to dangerously high voltage. Make sure you are aware of the level of electrical hazard when working on the system. Observe all electrical warning labels on the unit.

### *Electrical Shock Hazards*

All power must be disconnected prior to installation and servicing this equipment. More than one source of power may be present. Disconnect all power sources to avoid electrocution or shock injuries.

### *Hot Parts Hazards*

Electric resistance heating elements must be disconnected prior to servicing. Electric heaters may start automatically, disconnect all power and control circuits prior to servicing the unit to avoid burns.

## Moving Parts Hazards

**The motor and blower** must be disconnected prior to opening access panels. The motor can start automatically. Disconnect all power and control circuits prior to servicing to avoid serious injuries or possible dismemberment.

**The fans** are free-wheeling after the power is disconnected. Allow the fans to stop completely before servicing the unit to avoid cuts or dismemberment.

**Rotating fan blades** are present in the Wine Guardian PRO unit. Sticking a hand into an exposed fan while under power could result in serious injury. Be sure to use the Lockout/Tagout procedure when working in this area or remove the power cord.

## Equipment Safety Interlocks

There are no electrical safety lockouts installed within the unit. The power cord attached to the control box must be disconnected from the power sources prior to working on any part of the electrical system.

## Main Power Switch

The main power switch is located on the side of the Wine Guardian PRO unit. (See **Overview Illustration on page 12**) It shuts off the power to the unit.

### Energy Type                      Electrical

Hazard .....Electrocution, electrical burns and shock

Magnitude .....120 VAC and 230 VAC, 1 phase, 60 cycles

Control Method .....Disconnect power cord and On/Off switch

- **Never** reach into a unit while the fan is running.
- **Never** open an access door to a fan while the fan is running.
- **Disconnect** the power cord switch before working on the unit. The unit may have more than one power source to disconnect.
- **Avoid** risk of fire or electric shock. **Do not** expose the unit to **rain** or **moisture**.



- **Check** weights to be sure that the rigging equipment can support and move the Wine Guardian PRO SERIES unit safely. Note any specific rigging and installation instructions located in the Installation section of the Wine Guardian PRO Manual.
- All supports for the unit **must** be capable of safely supporting the equipment's weight and any additional live or dead loads encountered.
- All supports for the unit **must** be designed to meet applicable local codes and ordinances.

- **Do not** remove access panels until fan impellers have completely stopped. Pressure developed by moving impellers can cause excessive force against the access panels.
- Fan impellers continue to turn (free-wheel) after the power is shut off.



- **Clean** only with a dry cloth.
- **Never** pressurize equipment above specified test pressure. See Wine Guardian PRO Specification Sheet
- **Do not use the Wine Guardian PRO near water.**
- **Do not** block any supply or return air register or duct. Install in accordance with the instructions in the Wine Guardian PRO Manual. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- **Protect** the power cord from being walked on or pinched, particularly at the outlet plugs, convenience receptacles, and the point where it exits the unit.
- **Only** use attachments/accessories specified by the manufacturer.
- **Always** operate this equipment from a 120 VAC, 1 phase, and 60Hz power sources only.
- **Always** ground the outlet to provide adequate protection against voltage surges and built-up static charges.
- **Refer all** servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way such as:
  - ✓ The power supply cord or plug is damaged.
  - ✓ Liquid has been spilled or objects have fallen into the unit.
  - ✓ The unit has been exposed to rain or moisture.
  - ✓ The unit does not operate normally.
  - ✓ The unit has been dropped.

## Installation



**WARNING**  
**SHARP EDGES**

**RISK OF SERIOUS INJURY**

**SHARP EDGES ARE PRESENT INSIDE THE WINE GUARDIAN PRO SYSTEM**

### Pre-installation Test

Test the system before installing it to check for non-visible shipping damage.

#### **To test the system:**

- ✓ Set the system on the floor or a sturdy level surface.
- ✓ Plug in the system.
- ✓ Press the on/off switch and check that the control illuminates. This indicates the system has power.
- ✓ **The built-in timer prevents short cycling and keeps the system from turning on right away.** The system comes on and runs as long as the temperature of the space is above the thermostat set point. After several minutes, cold air comes out of the system from the evaporator section side and hot air comes from the condenser section. Listen for any unusual noise or vibration.



**WARNING**

**RISK OF PERSONAL INJURY OR DAMAGE TO EQUIPMENT**

**Modification to the equipment may cause injury or damage to the equipment**



**DANGER**

- ✓ **This equipment is heavy. Place the unit on the floor or on a level and stable surface that can support the full weight of the unit.**
- ✓ **Do not modify the equipment, it may cause damage to the equipment and will void the warranty.**
- ✓ **Never place anything on top of the unit.**
- ✓ **Never block or cover any of the openings or outlets to the unit.**
- ✓ **Never allow anything to rest on or roll over the power cord.**
- ✓ **Never place the unit where the power cord is subject to wear or abuse.**
- ✓ **Do not use extension cords.**
- ✓ **Never overload wall outlets.**
- ✓ **Do not remove or open any cover unless the unit is turned off and the power cord is unplugged.**
- ✓ **Use only dedicated power outlet boxes of the correct capacity and configuration for the unit model.**

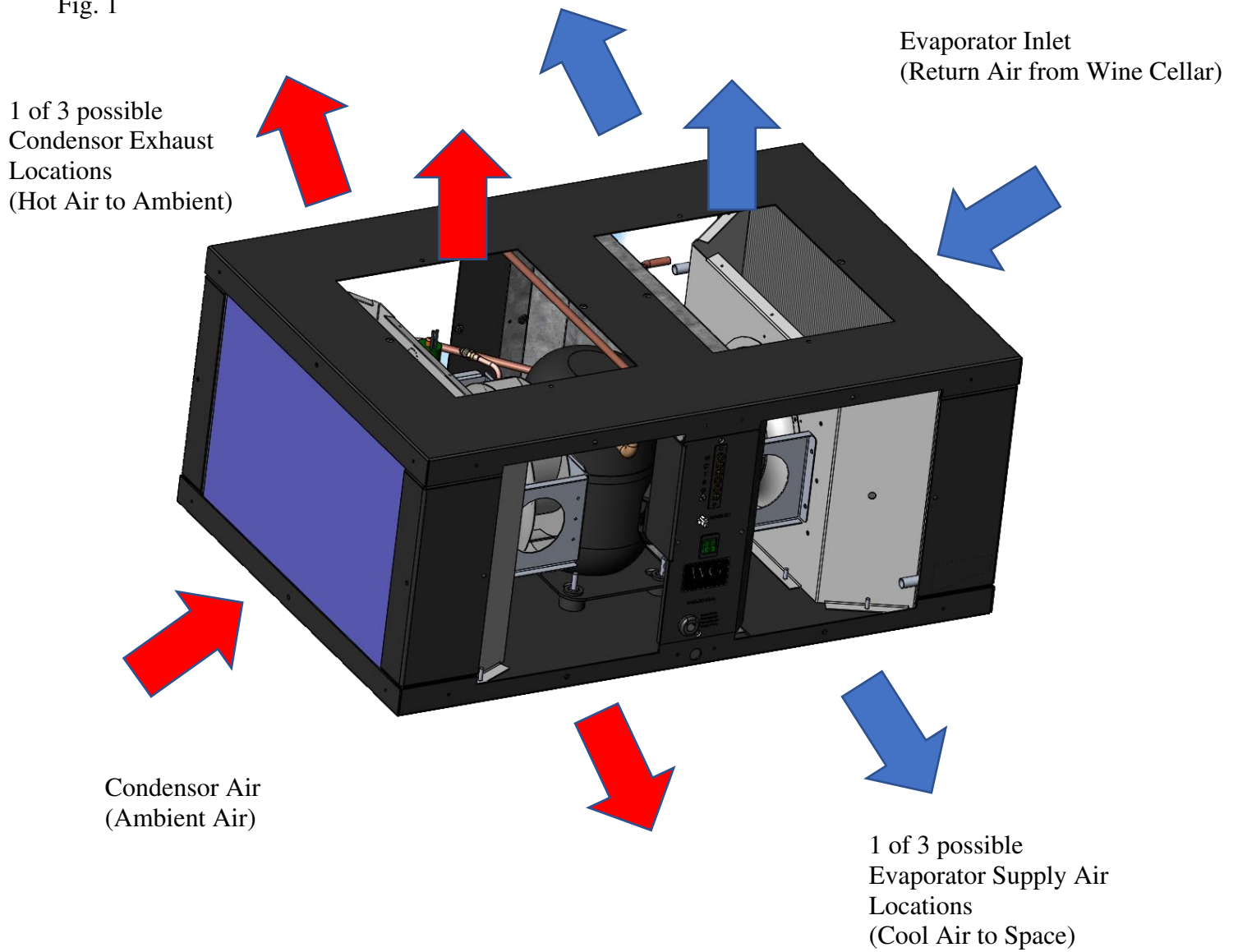




**RISK OF PERSONAL INJURY OR DAMAGE TO EQUIPMENT**  
**Improper installation may result in the equipment malfunctioning and a safety hazard.**  
**Read all of the installation instructions before installing the Wine Guardian PRO unit**

### Air Flow Illustration Ducted Model

Fig. 1



## Planning the Installation

### Addressing Items in the Planning Process

- ✓ Where to locate the unit? Should it be built into the wall or mounted remotely and ducted into the cellar or room?
- ✓ How to mount the unit?
- ✓ Decide where to locate the supply and return grilles in the room to achieve the temperature gradient and circulation preferred.
- ✓ Locate the electrical power outlet close to the unit, in cellar or out. **Do not use an extension cord!**
- ✓ Does the condenser heat exhaust need to be ducted away?
- ✓ Where to locate the thermostat?
- ✓ Where to run the drain line?
- ✓ Are all the parts here to complete the installation?

### Performing a Pre-installation Check

- ✓ Check for the proper installation of the electrical plug configuration.
- ✓ Check for the properly sized breaker.
- ✓ Is the cellar built with adequate insulation and vapor barriers?
- ✓ Are ducts installed above the ceiling or in accessible places properly sized before being covered?
- ✓ Is enough space available around the unit for service and repair?

### ***Locating the Unit***

Wine Guardian PRO units are typically installed indoors located near the cellar or room to minimize the duct runs. Each unit is provided with one entering or return air inlet and three possible supply air outlets for each of the evaporator and condenser sections. A maximum cumulative total length for both supply and return ducts (including bends) of 25 feet is recommended. If longer runs are needed use more than one supply opening to reduce the airflow in each duct by one half. **See Recommended Flexible Ductwork Sizing Chart on page 43.**

Provide a three-foot clearance around the unit for removal of grilles or ductwork, access to filters and unit maintenance. If the humidifier is used, provide access space in front of it for service.

## *Grilles*

Grilles can be purchased as an option for installation inside the cellar or room. The return air, or inlet, to the unit must connect to the return air outlet at the cellar or room. Any of the three supply air outlets on the unit can be used for the ductwork to the supply grille inside the cellar or room. The factory installed supply duct can be relocated to any of the other two openings. The procedures below apply to both the evaporator and the condenser sections. In most cases, no ducts are installed on the condenser section because the unit is located in a mechanical or storage type space. If exhaust heat is undesirable, use ductwork to move the heat outdoors or to another space.

## *Reducing Noise from the Unit*

Consider noise when locating the unit close to the cellar or an adjacent occupied space. A piece of 1 inch or two-inch dense rubber or Styrofoam with foil face in between the unit and the wall absorbs and reduces the noise from the unit. For air noise use larger grilles or use flexible ductwork to absorb the noise. Sound usually travels as a line of sight. Sound is reduced when it turns a corner, such as passing through a bend in ductwork. If the unit is supported from a wall or joist, using a rubber pad under the unit will reduce vibration transmission.

## **Installing the Unit Outdoors**

The Wine Guardian PRO is **NOT** designed nor approved for direct outdoor installation. If it is located outdoors, it **MUST** be protected with a rain-proof enclosure.

- ✓ Mount it above the ground on a solid, waterproof base to protect the unit from ground water.
- ✓ Do not locate it where grass clippings or leaves can blow into the unit.
- ✓ Keep the area around the unit clean and free of debris.
- ✓ Protect from damage when the unit is located in a garage or unheated shed. In both cases, the unit **MUST** have the low ambient controls built into the unit.
- ✓ Double insulating ducts with exterior grade insulation is recommended to keep the ducts dry and effective. Wine Guardian suggests installing one sized flexible duct inside the next larger size duct where ductwork is exposed.
- ✓ Allow enough space at both ends of the unit to remove ductwork and allow access for service.

## Mounting the Unit



### **RISK OF PERSONAL INJURY OR DAMAGE TO EQUIPMENT**

**Check supporting structure for load bearing capacity to support the Wine Guardian PRO.**

**All supports must be designed to meet applicable local codes and ordinances.**

**If in doubt, consult a qualified architect, engineer or contractor.**

***NOTE: Review the mounting illustrations on page 43 before mounting the unit.***

### ***Floor Mounting***

Mount the Wine Guardian PRO on the floor but elevate it on a frame with a plywood surface to keep it away from water. Allow adequate space for the external drain.

### ***Wall Mounting***

If the unit is mounted on a wall, construct a structurally sound, level platform that is adequately anchored to wall studs or wall system being used. The shelf should be of sufficient size and strength to support the full length and width of the Wine Guardian PRO. Use floor or knee braces to transfer the load of the unit to the wall.

### ***Ceiling Mounting***

Construct a structurally sound, level platform to place the unit on when hanging it from the ceiling joists. The Wine Guardian PRO systems are NOT designed to be suspended from the top of the unit; it must be supported from the bottom. Place the unit on a platform to ensure that the unit is supported on all four corners. Leave adequate space on the top of the unit to remove the access doors for service.

In all cases the unit must be level to within plus or minus one-quarter inch end-to-end and plus or minus one-eighth inch side-to-side for proper operation. Locate the unit as close to the cellar or room as possible to reduce the length of the duct runs. If possible, use short and straight ducting on all ductwork. The addition of quarter-inch thick rubber pads helps prevent the transmission of vibration and noise.

## Installing the Condensate Drain Connection

The Wine Guardian PRO systems provide dehumidification for the inside of the wine cellar or storage/preservation room. It cools the air down to the dew point corresponding to the temperature set point of the thermostat. If the vapor barrier of the wine cellar is poorly constructed or excess moisture is in the basement, the unit has to remove excessive amounts of moisture from the cellar or room. The moisture appears in the condensate drain of the unit.

## Installing the Drain Line

- ✓ The drain line must extend from the unit to an external drain or disposal site.  
Do not use drain tubing any smaller than one-half inch inside dimension on the unit.
- ✓ Splice the drain extension onto the drain outlet with a sort piece of one-half inch copper tubing and secure with claps.
- ✓ If no drain is available, use a bucket. Do not extend the drain below the rim of the bucket. Empty the bucket periodically.

The Wine Guardian PRO systems are provided with a built-in drain trap. The drain trap creates a water seal to prevent air from backing up into the drain pan and causing the drain pan to overflow. Do not create secondary traps in the external drain line.

Allow enough height for the drain line to function properly. If draining into a nearby sink, the unit must be elevated higher than the rim of the sink in order for the water to drain by gravity. Install with a one-quarter inch per linear foot of pitch. **Do not** tie the condensate drain line directly into the sanitary sewer system. See Accessories and Optional Equipment section for information about the condensate pump.

## Priming the Drain Trap

The internal drain trap primes itself automatically once the unit has run for a period of time and after the unit cycles off. This is confirmed by water dripping from the drain.

## Wiring the Unit for Power



**DANGER**

**ELECTRICAL SHOCK HAZARD  
RISK OF SERIOUS INJURY OR DEATH**

**The electrical outlet and wiring installation must meet the  
national and local building codes.**

### **DO:**

- ✓ Match the electrical wiring to the cord provided on the Wine Guardian PRO
- ✓ Provide dedicated circuit and wiring for the system.
- ✓ Match the wiring and breaker size to the rated load as shown on the serial plate and in this guide. See sample serial plate illustration on the following page.

## Sample serial plate

|                                                        |          |                     |                              |            |
|--------------------------------------------------------|----------|---------------------|------------------------------|------------|
| Model#                                                 | DP25     | WG<br>WINE GUARDIAN | Serial#                      | XXXXXXXXXX |
| Electrical                                             | 115/1/60 |                     |                              | 8.7        |
| Locked Rotor Amps                                      | 29       |                     | Humidifier Amps (opt.)       | 0.3        |
| Compressor RLA                                         | 7.2      |                     | Crankcase Htr. Amps (opt.)   | 0.4        |
| Condenser Fan Amps                                     | 0.7      |                     | Min. Circuit Amps (w/o opt.) | 10.6       |
| Evaporator Fan Amps                                    | 0.7      |                     | Refrigerant                  | R-134-A    |
| Condensate Heater                                      | N/A      |                     | System Charge                | 1lb. 3oz.  |
| Total Unit Amps (w/o opt.)                             | 8.6      |                     | Test Pressure                | 275psi     |
| 7000 Performance Drive, North Syracuse, New York 13212 |          |                     |                              |            |
| Ph:800-535-3295 * 315-452-7400 * Fax: 315-452-7420     |          |                     |                              |            |

### DO NOT:

- ✓ DO NOT MODIFY THE PLUGS IN ANY WAY!
- ✓ Do not use extension cords.

### IMPORTANT

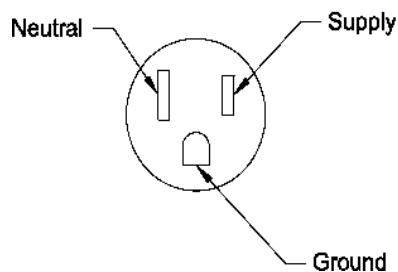
*The electrical power supply must be either 115 volt or 230 volt AC, 1 phase, 60 cycle, depending on the model of the unit, and cannot vary more than plus or minus 4% or damage may occur to the unit.*

Plug the unit into the wall outlet. Gently pull on the plug to make sure it is tight.

Fig.1 Plug configurations

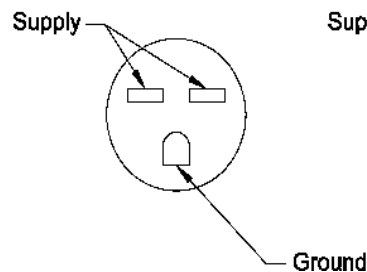
Required For:  
Models DP25 & DP50

-115VAC, 60Hz  
-NEMA 5-15R



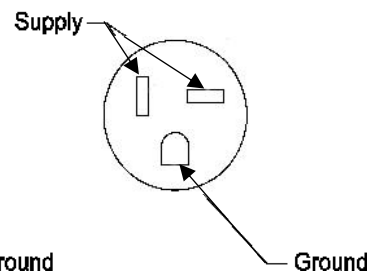
Required For:  
Models DP88

-230VAC, 60Hz  
-NEMA 6-15R



Required For:  
Models DP200

-230VAC, 60Hz  
-NEMA 6-20R



## Installing the Ductwork and Grilles

Use ductwork to connect the unit to the supply and return outlets in the cellar or room. Use only insulated ductwork to minimize cooling losses, prevent sweating, and to reduce noise.

Use ductwork on the condenser section to redirect or absorb sound, to bring in outside air to the unit inlet, and/or to exhaust the hot air out of the ambient space.

***NOTE: Do not exceed a total of 25 feet for each length of ductwork run.***

| <b>Recommended Insulated Flexible Ductwork Sizing Chart</b> |    |                                              |                                               |                                        |                         |                          |
|-------------------------------------------------------------|----|----------------------------------------------|-----------------------------------------------|----------------------------------------|-------------------------|--------------------------|
| <b>Evaporator (cooling) Coil</b>                            |    |                                              |                                               | <b>Condenser (heat rejection) Coil</b> |                         |                          |
| <b>Model#</b>                                               |    | <b>Inlet<br/>(Return<br/>Air)<br/>Single</b> | <b>Outlet<br/>(supply<br/>air)<br/>Double</b> |                                        | <b>Inlet<br/>Single</b> | <b>Outlet<br/>Double</b> |
| DP25                                                        | 8" | 8"                                           | 6"                                            | 8"                                     | 8"                      | 6"                       |
|                                                             |    |                                              |                                               |                                        |                         |                          |
|                                                             |    |                                              |                                               |                                        |                         |                          |
|                                                             |    |                                              |                                               |                                        |                         |                          |

**Notes:** 1. The above referenced sizes are internal diameter in inches.  
2. If a single supply is used out of the unit but then splits into two ducts, the size above that is recommended for double is used after the split.



### **CAUTION**

#### **RISK OF DAMAGE TO EQUIPMENT**

**Avoid crimping the flexible ducts. This chokes down the inside area and reduces the airflow causing the unit to operate erratically. Be sure all ducts and surface in contact with the airflow are insulated and have a vapor barrier on the outside surface.**

***NOTE: Uninsulated ducts and surfaces cause bare exposed metal surfaces to sweat, further degradation of the insulation and a loss of equipment cooling capacity.***

## Location of Supply and Return Grilles

Locate the supply and return grilles inside the cellar to create an airflow pattern that maximizes air circulation in the room. Avoid short circulating of the air.

### **Do Not:**

- Install the return air grilles directly on the floor as the grilles will collect dust from the floor.
- Locate the supply or return air grille where it is blocked by bottles, boxes or cases.
- Locate the supply air grille where it blows directly on the thermostat.

## **General Duct Recommendation**

- ✓ Support the flexible duct often to prevent sags or bends.
- ✓ Stretch the duct to make for a smoother interior with less air resistance.
- ✓ For a 90-degree bend, insert a metal elbow inside the flexible duct to avoid crimping.
- ✓ Do not squeeze or reduce the inside diameter of the ducts. This restricts the airflow.
- ✓ Use short and straight ductwork.
- ✓ Review the configuration schematic on the Overview Sketch on page 12 for information about which panels are available for duct connections and service.
- ✓ Remove the panels or grilles from the openings to connect the ductwork.
- ✓ Check that all the fan blades move freely.
- ✓ Check for loose foreign objects in any of the air paths.
- ✓ Connect the round flexible ducts to the Wine Guardian PRO using the duct collars that are provided with the duct accessory kit.
- ✓ Pull the outer plastic wrapping and insulation away from the end of the duct to expose the reinforced inside duct liner.
- ✓ Use tie straps or clamps around the **inside liner** to fasten the duct collar.

**Do not clamp around the outside insulation. It compresses and loosens over time.**

- ✓ Secure the duct collar to the unit using the screws provided. Be careful not to damage or bend the gasket.

## **Using Ductwork**

### ***Cold Air to/from cellar or room***

- ✓ Connect the supply air ductwork from the cellar to the supply air duct collar at the Wine Guardian PRO unit.
- ✓ Connect the return air ductwork from the cellar to the return air duct collar at the Wine Guardian PRO unit.

### ***Warm Air to/from Condenser***

- ✓ Connect ductwork on the condenser to direct heat and the air noise away from occupants.
- ✓ Connect ductwork to another space near the room or to the outdoors if the heat being exhausted is undesirable.

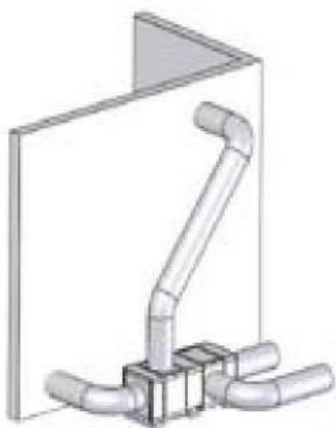


## Typical Mounting Arrangements

The following illustrations are suggested mounting arrangements. These illustrations are not intended to be complete and detailed installation drawings. For questions or help regarding installation contact the Wine Guardian distributor you purchased the unit from or email [info@WineGuardian.com](mailto:info@WineGuardian.com) for assistance.

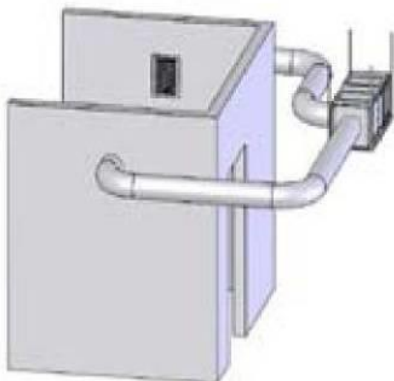
Fig.

### Remote Mount on Floor

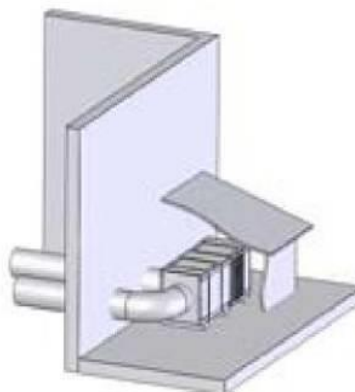


*Condenser inlet and  
exhaust – to outside*

### Ceiling Mounts



### Outside Remote Mount



## Duct Adapter Sizes

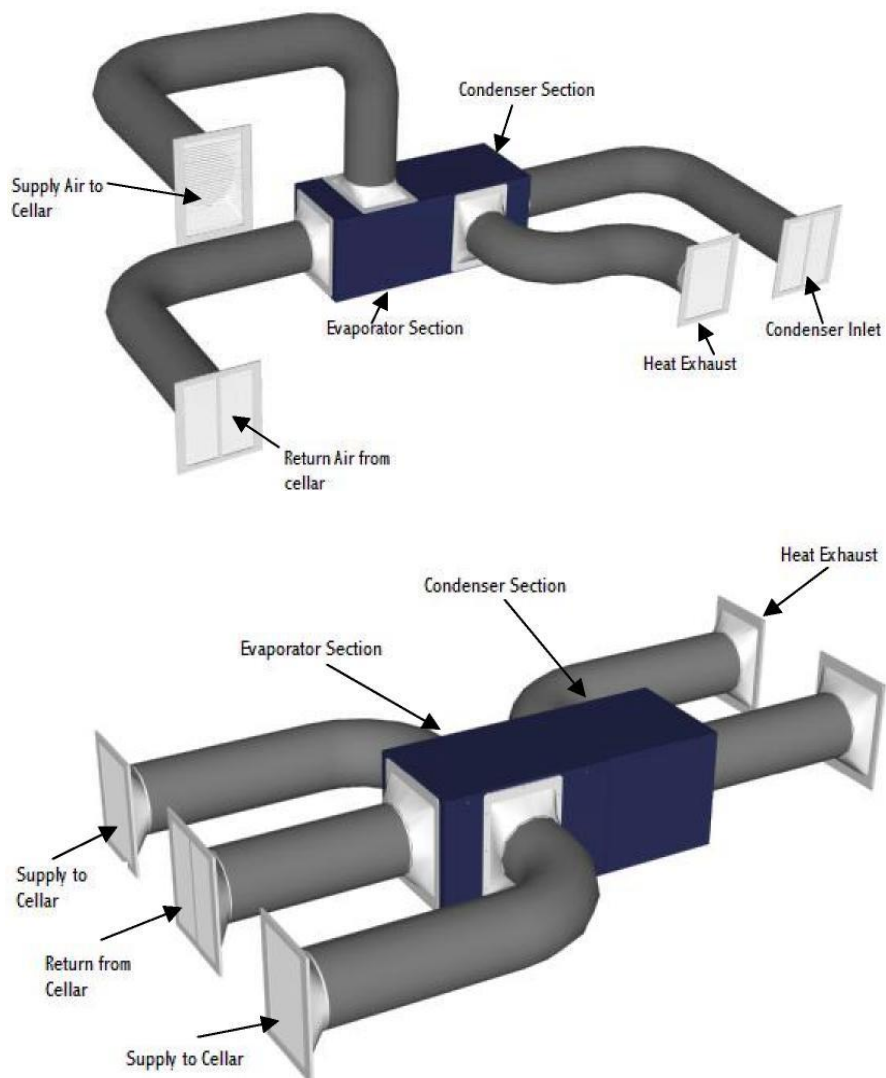
Table

| MODEL | LOCATION | ROUND<br>DUCT<br>SIZE | OPENING SIZE |        | FLANGE | SIZE   |
|-------|----------|-----------------------|--------------|--------|--------|--------|
|       |          |                       | WIDTH        | HEIGHT | WIDTH  | HEIGHT |
| DP25  | INLET    | 8.00                  | 11.59        | 11.55  | 14.00  | 14.00  |
| DP25  | OUTLET   | 8.00                  | 11.59        | 11.55  | 14.00  | 14.00  |
|       |          |                       |              |        |        |        |
|       |          |                       |              |        |        |        |
|       |          |                       |              |        |        |        |
|       |          |                       |              |        |        |        |
|       |          |                       |              |        |        |        |
|       |          |                       |              |        |        |        |

*Dimensions in inches*

## Ducting Options

### **Single Outlet Duct Installation**



## Inspection and Start-up Checklists

### Receiving and Inspecting

- ☐ Unit received undamaged
- ☐ Unit received complete as ordered including accessories

### Handling and Installing

- ☐ Unit mounted on solid level surface
- ☐ Sufficient space allowed for access to unit and accessories. Proper electrical service provided
- ☐ Hot water provided to humidifier
- ☐ Drain lines and trap installed properly
- ☐ Ductwork, fittings and grilles installed properly
- ☐ All cold duct surfaces insulated
- ☐ Low ambient control included if freezing condition present. No obstructions to air flow to condenser

### Starting-up the Unit

- ☐ General visual inspection looks good. All wiring connections checked
- ☐ All ducts, grilles and panels in place
- ☐ Start unit
- ☐ Check ducts and connections for air leaks
- ☐ Balance air distribution
- ☐ Confirm condenser airflow is unrestricted
- ☐ Verify cooling and heating operation
- ☐ Check for excessive noise or vibration

## Starting Up and Operating the Wine Guardian PRO

Now that the installation is complete, it's time to start the unit up. Check to make sure all ductwork and electrical connections are secure.

Make sure the thermostat or controller being used is connected to the WG PRO unit at the terminal strip connections on the side of the unit. Follow the wiring configurations provided with your thermostat/controller and the connection information included in this manual on page 26.

Replace all panels that were removed during installation. Check that all of the openings in the unit are covered with a blank panel, ductwork connection or a grille.



### **RISK OF PERSONAL INJURY**

**Cover all openings of the unit to prevent a hand or finger from access inside the unit.**

## Turn on the Unit

Plug in the unit. Turn-on the rocker switch on the side of the unit. The rocker switch lights up to indicate power to the unit. The unit may not come on right away due to the timer built into the circuiting to prevent short-cycling.

## Testing the Fan

Most thermostats have a setting or mode to allow the fan to run continuously regardless of whether the device is in cooling or heating mode. This setting may be referred to "Fan ON". "Auto" setting will indicate the fan is on only when heating or cooling.

## Running the Unit

- ✓ Check unit to confirm the compressor is running, such as the hum of the compressor or cool air leaving the unit.
- ✓ Check for any unusual noise or vibration, such as clanking or rubbing.

Initially, the unit may run continuously for several hours, up to a day or more, while it lowers the cellar temperature. Once the unit reaches the set point temperature, it shuts off and starts to cycle on and off as it continues to lower the bottle temperature to the set point. The cellar air reaches set point before the bottles. If the cellar temperature started at 75 degrees F, the supply air temperature discharged from the unit will probably be 15 degrees F to 20 degrees F colder. As the cellar temperature decrease to 55 degrees F, the supply temperature differential decreases 8 to 12 degrees F colder.

## **Cycling the Unit**

The fans continue to free-wheel for several minutes when the unit cycles off. This is normal. If the unit is furnished with a low ambient control, the condenser fan also cycles on and off during cooling. This maintains the head pressure on the compressor under low ambient conditions and is normal. The bottom of the compressor stays warm even when the unit is off to keep the lubricating oil warm and separated from the refrigerant.

## **Setting the Thermostat**

Normal settings are between 55 and 58 degrees F. If the optional heating coil is furnished, enter a separate temperature setting to maintain the lower setting. To prevent the unit from short cycling, the setting between heating and cooling should not be closer than 3 degrees F.

## **Regulating the Wine Cellar Temperature**

Wine cellars have a natural temperature gradient of approximately 5 to 10 degrees F between floor and ceiling. To increase or decrease the temperature in various zones, change the air flow patterns.

To keep the entire wine cellar at the same temperature, set the thermostat to run the supply fan continuously and not just when the cooling is operating. Set Fan switch to ON instead of AUTO.

***NOTE: To monitor the cellar temperature, place thermometers in various locations in the cellar to monitor the temperature zones. Change the temperature in various zones by shifting the air flow patterns.***

## **Changing the Air Flow Direction**

The grilles furnished with Wine Guardian PRO are single directional. Rotate the grilles to change the direction of the air flow.

When using multiple supply ductwork, balance the air flow between the ductwork. If too much air flows through one duct but not enough air flows from the other duct, install a damper or other restriction into the duct with too much air. That will force more air to flow out the other duct.

## Maintenance

### General



**BEFORE PERFORMING MAINTENANCE ON THE UNIT, READ AND UNDERSTAND THE SAFETY INFORMATION CONTAINED WITHIN THE SAFETY CHAPTER OF THE WINE GUARDIAN PRO MANUAL.**



**HIGH VOLTAGE - RISK OF SERIOUS INJURY OR DEATH**  
**High voltages are present in the cabinets. Turn off all power. Use the Lockout/Tagout procedure before opening panels.**



**SHARP EDGES**  
**RISK OF SERIOUS INJURY**  
**Sharp edges are present on the fan wheels, housing, fins and coils.**

Maintenance on Wine Guardian PRO units requires working with high voltage and sheet metal with possible sharp edges. Only qualified personnel should perform maintenance. Some tasks require knowledge of mechanical and electrical methods. Make sure you are familiar with all hazards, general safety related procedures, and safety labels on the unit.



**EXPOSURE TO MICROBIAL GROWTH (MOLD) CAN CAUSE SERIOUS HEALTH PROBLEMS**

Standing water in drain pans promote microbial growth (mold) that cause unpleasant odors and serious health-related indoor air quality problems. If mold is found, remove it immediately and sanitize that portion of the unit.

The Wine Guardian PRO is designed for minimal maintenance. The refrigerant system is hermetically sealed and requires no maintenance. The fans are permanently lubricated and require no maintenance. Some maintenance to the unit may be required due to dust or dirt in the air stream.

## Cleaning the Filters

The condenser coil is provided with a reusable, washable air filter. The filter protects the coil from becoming coated or plugged by dust. Frequency of cleaning the filters is based on the amount of dust or dirt generated in the cellar or basement.

1. Remove the duct collar on the inlet end of the unit.
2. Remove the filter covering the face of the coil.
3. Wash it under warm water.
4. Shake off excess water.
5. Inspect and clean the face of the coil.



**CAUTION**



**SHARP EDGES RISK OF SERIOUS INJURY**  
**Sharp edges are present on the fins and coils.**

6. Reinstall the filter.
7. Replace the duct collar.

## Cleaning the Condensate Drain System

The condensate drain system traps dust and dirt. Clean the drain system once a year.

1. Shut off the rocker switch and unplug the unit.
2. Remove the duct on the evaporator inlet.
3. Inspect the drain pan under the coil.
4. If drain pan appears soiled, pour some hot water mixed with liquid bleach (diluted solution) along the length of the pan to flush the dirt down the drain tube.
5. Continue this treatment until the drain appears clean and free of dirt.
6. Reinstall duct collar.
7. Plug in the unit and restart.

## Cleaning the Humidifier (optional)

If the unit was furnished with a humidifier it requires periodic maintenance. Follow the instructions in the humidifier guide.

## Heating Coil

The heating coil is located between the evaporator coil and blower inside the transition duct. It contains the heating element and high temperature limit switches. The heating coil is wired to work in conjunction with the thermostat. Since the thermostat prevents the heating and cooling circuits from being energized at the same time, no additional power wiring is needed. We do recommend using the AUTO mode on the thermostat so it can switch from heating to cooling automatically. If using either the heat or cool only mode, the thermostat will **not** switch automatically.

No additional maintenance is required for the heating coil. To test the heating coil operation, set the thermostat on HEAT and set the temperature above the cellar temperature. The supply air temperature should rise above the return air temperature by an amount shown in the specifications.

## **Low Ambient**

The purpose of the low ambient feature is to protect the compressor and refrigerant system. It has two distinct components, a crankcase heater to keep the oil in the compressor warm and prevent slugging on system start-up and a head pressure control to cycle the condenser fan on and off automatically to maintain system head pressure.

To confirm that the system is working, feel the bottom of the heater when the compressor unit has cycled off. When the unit starts, the condenser fan does not start at the same time as the compressor. The condenser fan starts after the head pressure has built up. As the unit is running the condenser fan cycles off/on while it holds the head pressure within a fixed range. The amount of cycling (frequency and duration) depends on the air temperature. The colder the air, the more frequent the cycling and with a longer duration.

## **Maintenance Schedule**

### **Monthly**

(or quarterly depending on experience with individual cellar)

- ✓ Check filter and drain trap – clean if needed.
- ✓ Check for noise or vibration.
- ✓ Check for short-cycling of the unit – a turning on and off of the compressor unit more than eight times/hour.

### **Yearly**

(in addition to monthly)

- ✓ Replace filters if worn or plugged beyond cleaning.
- ✓ Check evaporator and condenser coils for dirt – use a vacuum with a brush attachment to clean the coils.
- ✓ Clean condensate pan under the evaporator coil by flushing. Be careful to keep the drain pans clear of any and all debris.
- ✓ Inspect cabinet for corrosion or rusting – clean and paint.
- ✓ Inspect for dirt buildup on or inside the unit. Clean unit by vacuuming or wiping it down.
- ✓ Check for loose insulation, fasteners, gaskets or connections.
- ✓ Check the wiring connections and integrity of cords.
- ✓ Examine ducts for any cracks or breach.
- ✓ Check fan and solenoid on humidifier.
- ✓ Replace humidifier pad (if used).



## Troubleshooting



**WARNING**

**BEFORE PROCEEDING, READ AND UNDERSTAND THE SAFETY INFORMATION CONTAINED IN THE SAFETY SECTION OF THE WINE GUARDIAN PRO MANUAL.**

### **IMPORTANT**

*This section is intended as a diagnostic aid only. For detailed repair or parts replacement procedures, contact a qualified service company. Check the following table for some solutions before calling a service technician.*

| <b>Typical Start-up Problems</b>                                                     |                                                                                                                                         |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Possible Cause</b><br>Loose, improper or defective thermostat or humidistat cable | <b>Solution</b><br>Check power, and thermostat or humidistat cable                                                                      |
| Incorrect thermostat or humidistat (optional) settings                               | Check the thermostat and optional humidistat set up for the application                                                                 |
| Changed settings on the thermostat                                                   | A common problem is not waiting long enough for the internal timers to complete their timed delay                                       |
| <b>Unit Does Not Start-up</b>                                                        |                                                                                                                                         |
| <b>Power Switch Light is Off</b>                                                     |                                                                                                                                         |
| <b>Possible Cause</b><br>Switch not on<br>No power to outlet<br>Unit not plugged in  | <b>Solution</b><br>Turn on switch<br>Check circuit breaker and wiring<br>Plug in the unit                                               |
| <b>Power switch light is on and the thermostat light is off</b>                      |                                                                                                                                         |
| <b>Possible Cause</b><br>No power to thermostat                                      | <b>Solution</b><br>Check wiring for loose, broken or frayed connections<br>Check wiring for proper splicing<br>Thermostat may be faulty |
| <b>Power switch light is on and the thermostat light is on</b>                       |                                                                                                                                         |
| <b>Possible Cause</b><br>Thermostat is not set up properly                           | <b>Solution</b><br>Check thermostat set up in the guide.<br>Press fan ON switch to check evaporator fan only                            |

***Unit is operating and blows evaporator air,  
but the supply air is not colder than the return air from the cellar***

| Possible Cause                                                    | Solution                                                                 |
|-------------------------------------------------------------------|--------------------------------------------------------------------------|
| Thermostat not set up properly<br>thermostat guide                | Check thermostat setup in the manufactures                               |
| Compressor not operating                                          | High pressure switch open (button up)<br>Alarm will appear on thermostat |
| Condenser airflow is blocked<br>Clean filter and coil (if needed) | Remove blockage                                                          |
| Head pressure (HP) switch is open                                 | Reset HP switch<br><b>See reset instructions on page 57</b>              |

### **Problems Controlling Cellar Temperature**

***NOTE: Problems are occurring even though the unit seems to be fully operational  
evaporator fan blows air into the cellar and compressor and condenser fan runs.***

| <b><i>Cellar Temperature too cold (below 51°) when unit is running</i></b>      |                                                                                                                         |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Possible Cause                                                                  | Solution                                                                                                                |
| Thermostat set too low on cooling                                               | Reset thermostat to higher cooling temperature                                                                          |
| Heating coil (optional) not operating                                           | Check for temperature rise across coil                                                                                  |
| Thermostat set too low on heating                                               | Reset thermostat to higher heating temperature                                                                          |
| Thermostat not controlling temperature                                          | Thermostat mounted in improper location                                                                                 |
| <b><i>Room Temperature is too cold (below 51°) when unit is not running</i></b> |                                                                                                                         |
| Possible Cause                                                                  | Solution                                                                                                                |
| Too much heat loss to adjacent spaces                                           | Increase insulation around the ductwork<br>Check and clean filter and coil<br>Coil frozen – shut off unit for two hours |
| Cellar loads are too high                                                       | Install additional insulation<br>Replace with larger sized unit                                                         |

## Problems Controlling Cellar Humidity

| <b><i>Humidity too low or supply air is too cold, without optional humidifier</i></b> |                                                                                                                                      |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Possible Cause</b>                                                                 | <b>Solution</b>                                                                                                                      |
| Not enough evaporator airflow                                                         | Remove blockage in supply or return ductwork<br>Check and clean filter and coil<br>Coil frozen – shut off unit for two hours         |
| Defective thermal expansion valve                                                     | If under warranty call for service<br>If not under warranty call a refrigeration technician                                          |
| Temperature set too cold                                                              | Raise temperature setpoint at thermostat                                                                                             |
| <b><i>Humidity too low, without optional humidifier</i></b>                           |                                                                                                                                      |
| <b>Possible Cause</b>                                                                 | <b>Solution</b>                                                                                                                      |
| No moisture being added to cellar                                                     | Add Wine Guardian PRO humidifier or a room humidifier                                                                                |
| <b><i>Humidity too low with optional humidifier</i></b>                               |                                                                                                                                      |
| <b>Possible Cause</b>                                                                 | <b>Solution</b>                                                                                                                      |
| Humidifier not operating                                                              | Check wiring for loose, broken or frayed connections<br>Check humidistat set up<br>Check for water flow and solenoid valve operation |
| Humidifier operating                                                                  | Check for water being hot<br>Check drip pad – replace if scaled<br>No vapor barrier around cellar                                    |
| <b><i>Humidity too high when unit is running but not cooling</i></b>                  |                                                                                                                                      |
| <b>Possible Cause</b>                                                                 | <b>Solution</b>                                                                                                                      |
| Compressor not operating                                                              | Check and reset high limit switch<br>Clear blockage of condenser airflow                                                             |
| Ambient temperature is too high                                                       | Reduce temperature or draw condenser air from another space                                                                          |

| <b><i>Humidity too high when unit is running and cooling</i></b> |                                                                                                                                              |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Possible Cause</b>                                            | <b>Solution</b>                                                                                                                              |
| Too much moisture in cellar                                      | Poor vapor barrier installation<br>Humidifier malfunction refer to the humidifier instructions.<br><br>Add dehumidifier to surrounding space |

### **Other Miscellaneous Problems**

| <b><i>Unit operates but the power switch light is not ON</i></b>                   |                                                           |
|------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <b>Possible Cause</b>                                                              | <b>Solution</b>                                           |
| Bulb is burned out                                                                 | Replace bulb                                              |
| <b><i>Unit is leaking water</i></b>                                                |                                                           |
| <b>Possible Cause</b>                                                              | <b>Solution</b>                                           |
| Piping from unit to drain is trapped                                               | Re-pipe to remove external traps                          |
| Trap plugged                                                                       | Clean trap                                                |
| Condensate pan plugged                                                             | Remove blockage and clean                                 |
| Unit not level                                                                     | Level with shims                                          |
| <b><i>Unit is running properly, but the sound of the unit is objectionable</i></b> |                                                           |
| <b>Possible Cause</b>                                                              | <b>Solution</b>                                           |
| Noise is from airflow                                                              | Redirect airflow<br>Add baffles<br>Add insulated ductwork |
| Noise if from unit                                                                 | Add sound baffle between unit and occupied                |

## High Pressure Switch has Shut Down the Unit

Every Wine Guardian PRO unit has a manual reset high pressure switch in the refrigeration system. This switch shuts the compressor and condenser down if the head pressure in the system is too high. It is intended to protect the compressor. Restricted airflow through the condenser is the most common reason for the pressure to become too high. This can be caused by dust covering the filter or an obstruction blocking the airflow in the duct or grille.

| Possible Cause                                                                   | Solution                                                                                                                                    |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Head pressure in unit is too high because an obstruction is restricting air flow | Remove the obstruction in the duct or grille or clean the filter. Then restart the unit after resetting the using the high pressure switch. |

### Instructions to Reset High Pressure Switch

1. Remove the access panel, grille or duct collar at the condenser opening labeled “ Manual Reset High Pressure Switch → Remove panel to access ”
2. Locate the high pressure switch near the compressor (a cylindrical device piped into the refrigeration system with two wires a red button on the top).
3. Push in the button until it locks into position.
4. Push the rocker switch to restart the unit.



## Advanced Troubleshooting

### **IMPORTANT**

*This section is intended for qualified refrigeration service technicians only.  
The technician should repeat all of the previous troubleshooting steps before taking action on these more technical solutions.*

#### **Evaporator coil is freezing**

| Possible Cause     | Solution                           |
|--------------------|------------------------------------|
| Charge too low     | Check for leaks<br>Add refrigerant |
| TXV malfunctioning | Repair or replace                  |

#### **High pressure switch keeps tripping**

*Even After Checking for Obstructions and Dirty Filters/Coils*

| Possible Cause              | Solution          |
|-----------------------------|-------------------|
| Condenser fan not operating | Repair or replace |
| Defective switch            | Replace           |

#### **Unit cycles on and off more than 8 times/hr**

| Possible Cause            | Solution                                                         |
|---------------------------|------------------------------------------------------------------|
| Thermostat malfunctioning | Check the thermostat guide for thermostat information            |
| Low suction pressure      | Check low pressure switch<br>Check pressure and adjust superheat |

#### **High pitched or loud rubbing noise, clanking or vibration**

| Possible Cause                 | Solution          |
|--------------------------------|-------------------|
| Fans loose or malfunctioning   | Repair or replace |
| Excessive compressor vibration | Replace           |
| TXV malfunctioning             | Repair or replace |

#### **Replacing the blowers**

**NOTE:** When replacing the fan or motor, replace the fan and motor as a unit.  
Do not remove the motor from the impeller wheel.

## Warranty

### GENERAL

**Wine Guardian** warrants, to the original buyer, its goods and all parts thereof to be free from defects in material and workmanship for a period of two (2) years from the date of invoicing assuming **NORMAL USE AND SERVICE**.

### LIABILITY

**Wine Guardian** liability shall be limited to the repair or replacement (at its option) of any part, which, at our sole discretion, is determined to be defective. The purchaser shall pay all transportation costs. Additionally, if a malfunction occurs within the first year from the date of invoice **Wine Guardian** will reimburse the reasonable cost of labor required for the repair or replacement provided authorization is obtained from one of our authorized representatives prior to incurring any labor charges.

### LIMITATIONS OF LIABILITY

THESE WARRANTIES ARE MADE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND IN LIEU OF ANY OTHER OBLIGATION OR LIABILITY, INCLUDING LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. **Wine Guardian** will not be responsible for any costs or liabilities whatsoever resulting from improper installation or service of its equipment. In the event that **Wine Guardian** or its distributors are found liable for damage based on any defect or nonconformity in the products, their total liability for each defective product shall not exceed the purchase price of such defective products. No person or representative is authorized to change these warranties or assume any other obligations or liabilities for **Wine Guardian** in connection with the sale of its systems.

### INDEMNIFICATION

Purchaser agrees to indemnify, hold harmless and defend seller and its officers, directors, agents and employees from and against any and all claims, liabilities, costs and expenses arising out of or related to Purchaser's use of the goods, or in any way involving injury to person or property or accident occasioned by the goods sold by **Wine Guardian** to Purchaser.

### FOREIGN GOVERNMENT AND INDIAN NATIONS

If Purchaser is a foreign government or an Indian nation, Purchaser hereby expressly waives its defense of sovereign immunity in the event of a dispute between Purchaser and **Wine Guardian** regarding this invoice and Purchaser expressly acquiesces to the jurisdiction of the federal and state courts of the United States.

### SEVERABILITY

If one or more of the provisions contained in this contract shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any provision of this contract, but this contract shall be construed as if such invalid, illegal or unenforceable provision had never been contained.

### ADDITIONAL REQUIREMENTS

If a defect covered by the Warranty occurs, contact **Wine Guardian** for authorization to proceed with corrective action. Do not return any parts or incur any charges for which you expect to be reimbursed under this Warranty without receiving this authorization. If parts are replaced under this Warranty, the defective parts must be returned prepaid within 30 days. This warranty shall be null and void in its entirety if the Serial Number on the air conditioner or compressor is altered, removed or defaced.

## Labor Allowance for Warranty Repairs

Wine Guardian warranty policy can be found in the Installation, Operation and Maintenance Guide for the system you have purchased or at [www.wineguardian.com/warranty](http://www.wineguardian.com/warranty). Our labor allowance for warranty repairs of Wine Guardian products will be:

- Compressor replacement (4 hours) = \$400.00
- TXV/ cap tube replacement (3 hours) = \$300.00
- Braze joint repair (3 hours) = \$300.00
- Fan replacement (2 hours) = \$200.00
- Main control board replacement (2 hours) = \$200.00
- Coil replacement (4 hours) = \$400.00
- Remote / local interface replacement (1 hour) = \$100.00

\*\*\* The labor allowance will not cover mileage, diagnosing or additional technicians. If your application entails extenuating circumstances, please contact factory for any required approval before proceeding with warranty repairs.



## Contact and Warranty Information

### Contact Information

**Wine Guardian**  
7000 Performance Drive  
North Syracuse, NY 13212

Normal business hours are 8 a.m. to 5 p.m. Eastern, Monday-Friday.

Web site: [www.wineguardian.com](http://www.wineguardian.com)  
Email: [info@wineguardian.com](mailto:info@wineguardian.com) ; [help.wineguardian.com](mailto:help.wineguardian.com)

### Warranty and Warranty Procedure

The Wine Guardian PRO unit serial number is noted on all packing lists and bills of lading and, along with the shipping date, is kept on file at Wine Guardian for warranty purposes. **All correspondence regarding warranty must include the model number and serial number of the unit involved.** Note that the warranty is null and void if the serial number on the unit or compressor is altered, removed or defaced. All inquiries or correspondence regarding warranty should be handled in accordance with the “Warranty” and directed to:

**Wine Guardian**  
7000 Performance Drive  
North Syracuse, New York 13212  
Attn: Service Department

This procedure includes but is not limited to:

- Obtaining authorization from Wine Guardian prior to incurring any charges for repair or replacement under warranty.
- Or returning prepaid within 30 days any and all defective parts.