

# CellarMate



*The Key to Wine Cellar Climate Control*

*Installation, Operation, and Maintenance Manual*

# **CONGRATULATIONS!**

*on your purchase of a CellarMate Climate Control System. Our climate control systems are designed to provide you with many years of reliable, maintenance-free service.*

*Please read the following information, especially the safety information, to ensure that you receive the maximum benefits of owning a CellarMate,*

## **THE KEY TO WINE CELLAR CLIMATE CONTROL.**

# CUSTOMER WARRANTY REGISTRATION

*Please complete and mail the Product Registration Card with a copy of your purchase receipt. By registering your product, you will automatically be enrolled in our Consumer Protection Program and receive the following:*

## **Product Safety Notification**

Registering your product allows us to contact you with updates and notifications about your CellarMate model.

## **Confirmation of Ownership**

We store model numbers, serial numbers, and owner information in our archives for ten years. In the event of fire, flood, or theft, your registration serves as proof of your purchase for insurance purposes.

## **Warranty Service**

Completing the Product Registration Card will expedite efficient warranty service.

Please cut on dotted line and mail registration form to: CellarMate LLC, PO Box 257, West Cornwall, CT 06796



PRODUCT REGISTRATION		
NAME: _____	DAY TEL: ( ) _____	
ADDRESS: _____	PURCHASE DATE: _____	
_____	INSTALL DATE: _____	
CITY: _____	STATE: _____	ZIP: _____
EMAIL: _____		
MODEL: _____	SERIAL: _____	DISTRIBUTOR: _____

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## Standard Specifications

The CellarMate 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.
- An automatic low pressure switch to prevent low suction pressures and frost formation on the coil.
- A manually reset high-pressure switch on the discharge to protect the compressor from high pressures.
- Environment-friendly refrigerant, only R-134a.
- A built-in condensate drain trap--no external trap is required.

The CellarMate meets or exceeds the 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, with permanently lubricated direct drive motors requiring no maintenance.

All exterior framing of the CellarMate is power coated, 0.063" gauge aluminum to prevent rust and corrosion. All coils are copper 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 access panels are provided to facilitate maintenance, duct connections, and access to wiring components.

The evaporator and the condenser coils have pre-filters on the inlet to prevent dust and dirt from fouling the coils, reducing capacity. Each unit has at least three discharge outlets on both the evaporator and condenser coils to facilitate custom installations.

Compressors are rotary, self-lubricating, hermetic reciprocating-type compressors with internal overload protection and capacitor start. Standard manufacturer's warranty is one year. Optional Extended Warranty is five years.

Electric power is supplied by a single cord and plug. All external controls are 24 volt, supplied from an internal transformer. The 230 volt units are capable of operating at 208 or 240 volt by changing the leads on the control transformer. (See Wiring Diagram)

## **Accessories and Optional Equipment**

### **Heating Coils**

The optional heating coil is built-in and requires no additional power source. The electric heating option is factory installed and includes primary and secondary over-temperature protection devices per UL and NEC. It is located between the evaporator coil and the 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 on at the same time, no additional power wiring is needed. Set the auto mode on the thermostat so it can automatically switch from heating to cooling

No 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.

### **Water Cooled**

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 control valve is used to regulate the flow of water to maintain head pressure. Leaving water is clean and acceptable for other applications. (This option available for the 025 model in the second quarter of 2005).

## **Duct Collars, Flexible Ducting, and Accessory Kits**

### **Duct Collars**

Duct collar adaptors are mounted on either a large panel (21"x12") or a medium panel (12"x12"), and come in two diameters; 10" for the CM050, CM088, and CM200, and 8" for the CM025. The duct collar adaptors replace the removable solid panels on the unit. (Refer to the Air Flow Illustration on page 8 8 for panel locations, and Ppanel sSizes on Page 215.)

### **Flexible Ducting**

The flexible ducting is a 25' foot length of 10" insulated ducting for the CM050, CM088, and CM200 and 8" insulated ducting for the CM025.

### **Accessory Kits**

An accessory kit consists of two duct collar adaptors (one of each size panel) and one 25' length of flexible ducting. Accessory kits come in both 10" and 8" diameters.

### **Low Ambient Option**

A factory installed Low Ambient Option (LAO) is available which makes the CellarMate capable of exposure to low ambient temperatures. This feature controls the condenser fan operation based on head pressure and heats the oil reservoir. The LAO is recommended whenever the condenser section is exposed to air temperatures below 40°F.

The LAO will 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 start-up, and a head pressure control to automatically cycle the condenser fan on and off 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 and on while it holds the head pressure within a fixed range. The colder the air, the more frequent the cycling and the longer the duration.

## **Humidifier and Humidistat**

A popular option for the CellarMate is the humidifier, supplied with a sheet metal adapter box and a pre-wired humidistat. The humidifier is designed for field installation and can be retrofitted onto existing CellarMate units. Each humidifier model is furnished with an electronic digital humidistat to control the humidity in the cellar. The humidifier mounts onto the CellarMate unit using the common drain, and requires a hot water supply. No additional external power is required.

When the humidistat calls for humidity, a damper inside the enclosure opens and allows air from the evaporator fan to flow through the drip pad and back into the inlet of the unit. A solenoid valve also opens, allowing water to flow into the distribution channel and drip down over the pad. The air flowing over the wet pad surface adds moisture to the air and increases the humidity in the cellar.

Since the cellar air temperature is cold, the water entering the humidifier must be HOT to be absorbed into the air stream. To avoid the buildup of dirt on the pad, install a 5 or 10 micron inline water filter ahead of the humidifier to keep dirt from fouling the evaporation pad inside. To avoid the buildup of mineral deposits on the pad, install a water softener.

To insure adequate wetted surfaces and help flush away excess minerals, set the water flow to always have a flow of water to the drain. When operating, the humidifier uses approximately 1 to 2 gallons of water per hour. About 60% of the water passes through and goes out the drain. There is an orifice in the line to restrict the flow of water, but a throttling valve may be needed to keep too much water from going to the pad. All that is needed is a steady drip of water out of the drain to ensure adequate wetting and flushing of the pad media. Pipe a gravity drain line to an open floor or sink drain, or use a condensate pump where a gravity drain is impractical. Discharge the excess drain water directly onto the ground, or combine the discharge into the condensate drain from the unit, but only downstream from the loop trap.

The CellarMate humidifier uses a 10" wide x 11" high x 2" thick pad. The rated output capacity for wine cellars at 55°F is 1.62.3 gallons per day (gpd) with 760°F water supply, 34.57 gpd with 950°F water, and 7.45.1 gpd with 120°F water. Weight of operating humidifier is 10 lbs.

# **Overview of the CellarMate Unit**

## **Cabinet**

The cabinet and access doors are constructed of aluminum with a powder coated finish for corrosion protection and an attractive, maintenance-free appearance. Areas in contact with cold temperatures are lined with insulation to prevent condensation.

## **Condensing Section**

Ambient air is circulated through the condenser section by a 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 a impeller blower. 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**

The electrical components and controls are located in a separate area accessible through the condenser section. All wiring is in accordance with the National Electrical Code. Wires are numbered and color coded to match the wiring diagrams.

## **Filters**

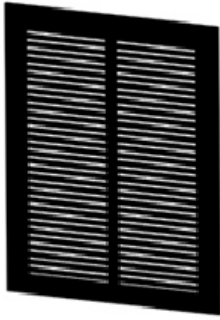
Nominal 1” thick filters are provided on both the evaporator and condenser inlets to protect the coils from dust and dirt. These filters are washable and reusable.

## **Refrigerant Circuit**

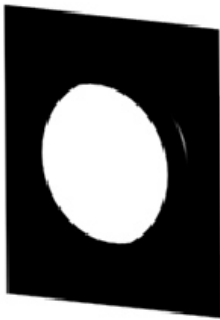
The factory-charged circuit includes an adjustable thermal expansion valve with an external equalizer, sight glass with moisture indicator, a filter dryer, an automatic low pressure switch, and a manually reset high pressure switch. For the low ambient option, an automatic pressure switch controls the operation of the condenser blower and a heating element is added to the compressor oil reservoir.

## **Supply/Return Grilles**

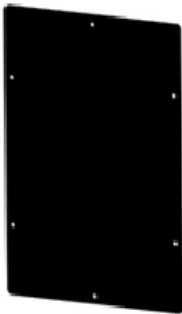
Powder-coated steel single direction grilles are provided for the inlets on the evaporator and condenser sections. One grille is provided on an outlet. These are readily interchangeable with access panels to control and direct the air flow.



Grilles: Additional grilles are available. Medium grilles are used for top or side ports; large grilles are used for end ports. See unit dimensions on Page 21.

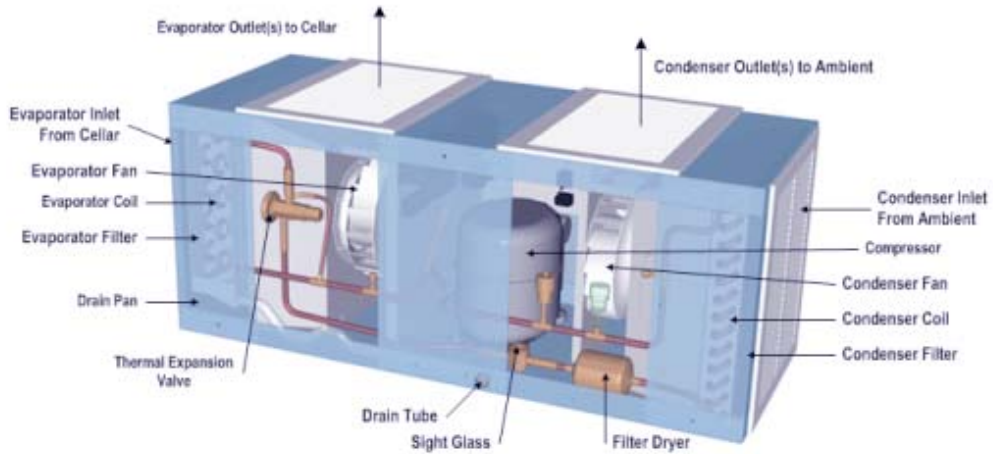


Duct collars: Duct collars are available. Medium collars are used for top or side duct ports; large collars are used for end ports. See unit dimensions on Page 21.

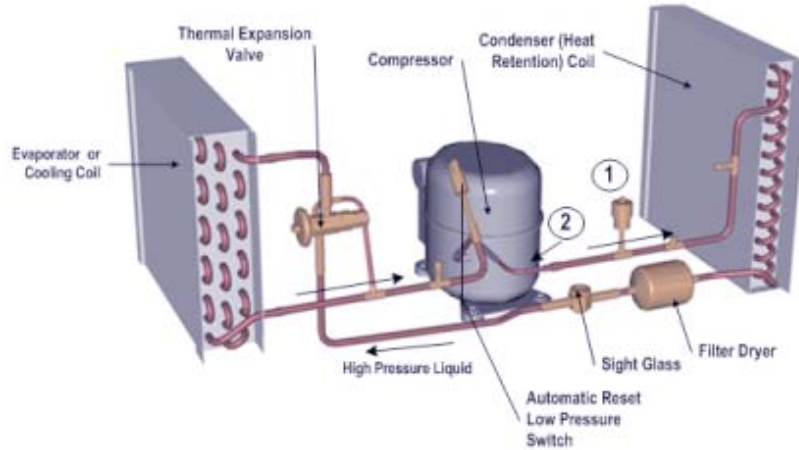


Cover plates: Solid cover plates are available. Medium plates are used for top or side parts; large plates are used for end ports. See unit dimensions on Page 21.

### Overview Illustration



### Refrigeration Illustration - Vapor Compression System



① Optional Low Ambient \* Pressure Control Switch (Cycles Condenser Fan to Maintain Head Pressure)

② Optional Low Ambient \* Crankcase Heater to Maintain Oil Temperature

## Safety Considerations

When performing maintenance, always use the following Lockout/Tagout Procedure. More than one power source may be present. Disconnect all power sources.

### Lockout/Tagout Procedure

Turn power switch to OFF. Lights should be off.

Unplug unit from electrical outlet



**WARNING**



- Never reach into a unit while the fan is running.
- Never open an access door downstream of the fan while the fan is running.
- Do not expose the unit to rain or moisture.
- Check weight specifications to confirm that supports are adequate.
- Confirm that supports are designed to meet local codes and ordinances.
- Do not remove access panels until fan impellers have completely stopped. Fan impellers continue to turn (free-wheel) after the power is turned off.
- Never pressurize equipment above the specified test pressure. (See Specification Sheet)
- Do not operate near water.
- Do not block any supply or return air register.
- Do not modify or change polarized or grounding plugs. If the provided plug does not fit into the outlet, consult an electrician for replacement of the obsolete outlet.
- Only use attachments/accessories specified by the manufacturer.
- The CellarMate unit only operates on 120 VAC or 230 VAC, 1 phase 60Hz power source.
- Always ground the outlet to provide adequate protection against voltage surges and static charge build-up.
- Refer all service to qualified personnel.
- Do not place anything on top of the unit.
- Do not use extension cords.
- Use only dedicated power outlet boxes of the specified capacity and configuration for the unit model.

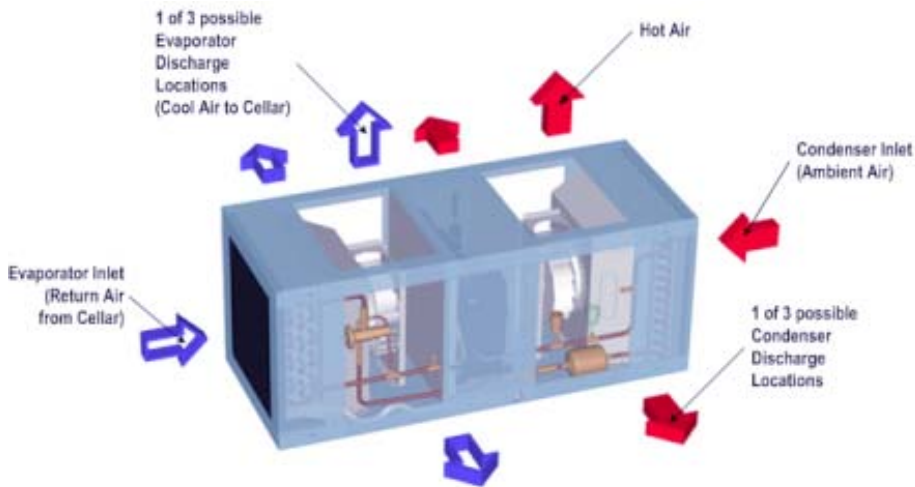
# Installation

## Pre-installation Test

Before installing your CellarMate unit, use the following procedures to test for non-visible shipping damage.

- Set the unit on the floor or on a sturdy level surface.
- Plug the power cord into an outlet.
- Turn the main power switch to ON. The power indicator light should be on.
- Override the timer: The built-in timer prevents short cycling and keeps the unit from turning on right away. Open the thermostat cover. Simultaneously press the fan and UP arrow buttons. The unit will run as long as the temperature of the space is above the thermostat set point. After several minutes, the unit will expel cold air from the evaporator section and hot air from the condenser section.
- Listen for unusual noise or vibration.

## Air Flow Illustration



## Planning the Installation

Before installation, determine the following:

- Where the unit will be located; e.g. built into the wall or mounted remotely and ducted into the cellar.
- Where the supply and return grills will be placed to achieve preferred temperature gradient and circulation.
- Location of the power outlet (do not use an extension cord).
- If the condenser heat exhaust will be ducted away.

- Where to place the thermostat.
- Where to run the drain line.
- All required parts are on-hand.
- 

## **Pre-installation Checklist**

Before installation, confirm the following:

- The electrical plug has the correct configuration.
- Breakers are the proper size
- The cellar has adequate insulation and vapor barrier
- Ducts are the correct size
- There is ample space around the unit to allow access for maintenance and repair

## **Placing the Unit**

CellarMate units are typically installed indoors, near the cellar to minimize the length of the duct run. Each unit is provided with one entering or return air inlet and three possible supply air outlets for the evaporator and condenser sections. A maximum cumulative length for both supply and return ducts of 50' is recommended. If longer runs are needed, use more than one supply opening to reduce the air flow in each duct by half.

Provide a 3' access clearance around the unit for maintenance access. If a humidifier is installed, leave space in front of it for service access.

## **Noise Insulation**

When placing the CellarMate unit close to the cellar or next to an occupied space, insert a piece of 1" or 2" dense rubber or foil-faced Styrofoam between the unit and the wall to absorb noise.

## **Grilles**

CellarMate units come from the factory with grilles over the openings of each of the inlets and three of the outlets. Remove the grilles as needed to install ductwork between the unit and the cellar.

The return air, or inlet, to the unit must connect to the return air outlet from the cellar.

Any of the three supply air outlets on the unit can be used for the ductwork to the supply grille inside the cellar. The factory installed outlet grille can be moved to any of the other two openings.

In most cases, no ducts are installed on the condenser section because the unit is located in a mechanical or storage space. If exhaust heat is undesirable, use the grilles to duct the heat outdoors or to another space.

## **Outdoor Installation**

CellarMate units are not designed for outdoor installation. If the unit must be installed outdoors, use a rain-proof enclosure and low-ambient kit.

- Mount the unit above the ground on a solid, waterproof base to protect the unit from ground water.
- Keep the area around the unit clean and free of debris.
- It is recommended to double insulate the ducts with exterior grade insulation to keep them dry and effective. Place one flexible duct inside a larger size duct where ductwork is exposed.
- Allow ample space at both ends of the unit for service access.

## **Mounting the Unit**

### **Floor Mounting**

Elevate the CellarMate on a 2"x4" frame with a plywood surface to protect it from water. Allow adequate space for the external drain.

### **Wall Mounting**

Confirm that the load bearing capacity of the supports is adequate and meets local codes and ordinances. Support the CellarMate on both sides of the wall. Use floor or knee braces to transfer the load of the unit to the floor or wall.

### **Ceiling Mounting**

CellarMate units are not designed for suspension from the top of the unit.

Construct a structurally sound platform on which to place the unit when hanging from ceiling joists. Ensure that the platform is supported on all four corners.

Leave adequate space above the unit for service access.

To operate properly, the unit must be level within ¼" end to end and 1/8" side to side.

Place the unit as close to the wine cellar as possible to reduce the length of the duct runs. Use straight, short ducting. To prevent transmitting vibration and noise, add ¼" thick rubber pads.

## **Installing the Condensate Drain Connection**

The CellarMate dehumidifies the inside of the wine cellar. If the wine cellar vapor barrier is poorly constructed or there is excess moisture in the adjacent area, the unit will remove the excess moisture from the wine cellar.

### **Installing the Drain Line**

1. Extend the drain line from the unit to an external drain or disposal site. Use ½" ID drain tubing or larger.
2. Splice the drain extension onto the drain outlet with a short piece of ½" copper tubing and secure with clamps.
3. Install with a minimum pitch of ¼" per linear foot to allow the drain line to function by gravity. Do not tie the condensate drain line directly into a sanitary sewer system.

Your CellarMate unit has a built-in drain trap which creates a water seal to prevent air from backing up into the drain pan and causing the drain pan to overflow.

### **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. When functioning, water will drip from the drain.

## **Wiring the Unit for Power**



## WARNING



Note: The electrical outlet and wiring installation must meet national and local building codes.

- Use an electrical outlet configured to match the plug on the CellarMate.
- Confirm that the wiring and breaker conform to the rated load listed on the serial plate. See illustration below.

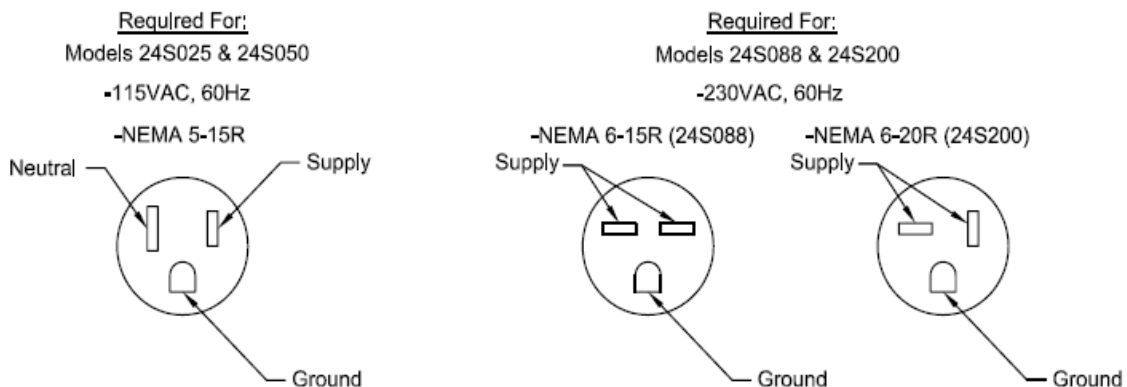
CellarMate	
Model# 24S025	
Serial # XXXX XXXX	
Electrical	115/1/60
Locked Rotor Amps	29.0
Compressor RLA	7.2
Condenser Fan Amps	0.7
Evaporator Fan Amps	0.7
Crankcase Heater Amps	0.4
Electric Heater Amps	8.7
Humidifier (Optional) Amps	0.3
Total Unit Amps	10.1
Minimum Circuit Amps	12.6
Refrigerant	R-134a
System Charge	11bs 3oz
Test Pressure	275psii

- Use a dedicated circuit and wiring.
- Do not modify the plug in any way.
- Do not use extension cords.

## IMPORTANT

**Use only 115 volt or 230 volt (depending on model) AC1 phase/60 cycle power supply with a variance no greater than +/-4% to avoid damage.**

### Electrical Plug Configuration



## **Installing the Thermostat and Control Wiring**

CellarMate units come with a thermostat and 25' of wiring. They are wired at the factory and tested before shipping. This wiring can be used for an initial start-up on-site. See “Start-up Instructions” in the thermostat guide for installation and operation.

### **Removing the Wires for Installation**

- Note the color coding on the wires before removing
- Using the proper screwdriver, loosen the screws and pull the wires free.

### **Reinstalling the Wires**

- Realign color coded wires
- Wrap each wire around the screw and tighten the screw.

### **Additional Wiring**

- Splice onto the factory furnished wire
- Match the wire colors for continuity
- Insulate the splice with electrical tape



**WARNING**



**Incorrect thermostat wiring will result in improper operation and may cause damage to the unit and thermostat.**

**Confirm that each colored wire is connected to the appropriate color-coded slot on the terminal strip, and that the connections are secure.**

## **Mounting the Thermostat**

Two sets of instructions are provided with the unit; the Homeowner’s Guide and the Installation and Operation Instructions Guide. Use the Homeowner’s Guide to set and operate the thermostat. Review the Installation and Operating Instructions Guide to learn about the features of the thermostat.

Mount the thermostat on a solid surface, away from doors, corners, air outlets, drafts, or heat generating equipment. Do not mount the thermostat directly on an outside wall or on a wall adjacent to a boiler room. Place a piece of foam insulation behind the thermostat to insulate it from heat and cold. The recommended height is 4 to 5’ above the floor.

### **Thermostat Setting Options**

The thermostat is Model AC, intended for 1 stage cooling and 1 stage heating.

**Option 02** – Under configuration has a “Change Filters” alert. The alert is determined by hours of fan (blower) operation and can be set between 400 and 3600 hours. The original factory setting is 800 hours, but can be changed. The required

number of hours between filter changes is determined over time for each individual unit and installation.

**Option 04** – The optional heating coil is ON. In addition to cooling, this setting energizes the evaporator fan when heat or humidity is required.

**Option 15** – The automatic switch for the thermostat is ON. This setting automatically switches the thermostat from the heating mode to the cooling mode. Only for units ordered with the optional heating coil.

### **Built-in Time Delays**

Time delays are built into the CellarMate to protect the components from damage due to short cycling. Note the various time delays that are explained in the Installation and Operating Instructions Guide.

*\* When the COOL ON indicator is flashing, the unit is waiting for the timer before starting.*

### **Supply and Return Grills Placement**

Place the supply and return registers inside the cellar to create an air flow pattern that maximizes air circulation in the room. Avoid short circulating the air.

- To avoid collecting dust, do not install the return air registers directly on the floor.
- Avoid placing the supply or return grilles where they are blocked by bottles, boxes, or cases.
- Avoid placing the supply air grille so it blows directly on the thermostat.

The following installation diagrams are for general ideas only. They are not intended to be complete, detailed installation drawings. For questions regarding installation, contact your distributor. If further assistance is required, contact us at 888-564-2932, or email [info@cellarmate.com](mailto:info@cellarmate.com), or fax your inquiry to 860-672-6347.

### **Installing the Ductwork**

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

Use ductwork on the condenser section to redirect or absorb sound, bring conditioned air to the unit inlet, and to exhaust hot air out of the ambient space. Follow the recommendations and warnings for duct installation.

Note:

**DO NOT EXCEED A TOTAL OF 25' FOR EACH LENGTH OF DUCTWORK RUN.**

## Recommended Insulated Flexible Ductwork Sizing Chart

Model #	Evaporator (cooling) Coil			Condenser (heat rejection) Coil		
	Return Air	Supply Air		Return Air	Supply Air	
		Single	Double		Single	Single
025	8"	8"	6"	8"	8"	6"
050	10"	10"	6"	10"	10"	6"
088	10"	10"	8"	10"	10"	8"
200	12"	12"	10"	12"	12"	10"
Notes: 1. The above sizes are internal diameter in inches						
2. If a single supply is used out of the unit, but then splits into two ducts, use the sizes indicated for "Double" after the split.						

Avoid crimping the flexible ducts, which reduces air flow and causes erratic operation.

Be sure that all ducts and surfaces that are in contact with the air flow are insulated and have a vapor barrier on the outside surface.

### General Duct Recommendations

- Support the flexible duct often to prevent sags or bends. (Place supports close enough to prevent the flexible ducting from sagging or bending).
- Stretch the duct to create a smooth interior and reduce air resistance. Rigid ductwork is best.
- Insert a metal elbow in the flexible duct at 90° bends to maintain form.
- Use straight and short lengths of ductwork.
- Review the Air Flow Illustration on page 8 for duct connection options.
- Remove the panels or grilles from the openings where the ductwork will be connected and save the screws.
- Confirm that all fan blades move freely.
- Confirm that no foreign objects obstruct the air paths.
- Install the panels with the duct collars using the screws from the original panels or grilles. Handle the gaskets with care.
- Pull the outer plastic wrapping and insulation away from the end of the duct to expose the reinforced duct liner.
- Connect the flexible duct by inserting the exposed portion into the duct collar.
- Clamp the tie straps around the inside liner. Fasten the duct to the duct collar.



## WARNING



**Do not clamp the tie straps around the outside insulation—  
Over time, insulation will compress and loosen.**

- Secure the duct collar panel to the unit using the screws set aside.



## WARNING



**Non-insulated ducts and surfaces can cause exposed metal surfaces to sweat,  
further degradation of the insulation, and a loss of equipment cooling  
capacity.**

### **Ductwork**

#### **Cold Air to the Wine Cellar**

- Remove the supply air grille or access door panels to install the ductwork from the CellarMate to the wine cellar.
- Connect the supply air ductwork from the cellar to the supply air outlets at the CellarMate unit.
- Connect the return air ductwork from the cellar to the return air inlet at the CellarMate unit.

#### **Warm Air to the Condenser**

- Connect ductwork on the condenser to direct heat and sound away from occupants.
- Connect ductwork to another space within the basement, a building, or to the outdoors if the heat being exhausted will raise room temperature.

### **No Ductwork**

The supply and return grilles stay on the unit if no ductwork is used. Additional solid panels may be required; available from your distributor or CellarMate.

## **Start Up and Operation**

- Check all ductwork and electrical connections to confirm they are secure.
- Replace all panels that were removed during installation.
- Make sure that all openings on the unit are covered with either a panel, ductwork collar, or a grille.

### **Turn the Rocker Switch ON**

Turn the rocker switch (on top of the unit) to ON. The switch will light up to indicate that the unit is receiving power. The unit may not begin operating immediately due to the built-in timer which prevents short-cycling.

### **Set the Thermostat**

Refer to the thermostat instructions. Set the thermostat to AUTO and 55°F.

### **Test the Fan**

Push the FAN button on the thermostat to switch from AUTO to FAN as indicated on the display screen.

**FAN - The fan runs continuously and indicates that the power is ON and the control circuit is energized and operating.**

**AUTO - The fan runs when the thermostat calls for cooling or heat, or the optional humidistat calls for humidification.**

### **Operating the Unit**

Listen for the compressor. The hum will be audible, with no excessive vibration or sounds.

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 will turn off and then begin to cycle on and off as it continues to lower the bottle temperature to the set point. The cellar air temperature will reach the set point before the bottle temperature. If the cellar air temperature started at 75°F, the supply air discharged by the unit will be 15 to 20°F colder. As the cellar air temperature decreases to 55°F, the difference in the supply air temperature will decrease to 8 or 12°F.

### **Cycling the Unit**

The fans will continue to free-wheel for several minutes after the unit cycles off. This is normal.

If the unit is equipped with a low ambient control, the condenser fan will also cycle on and off during cooling. This will maintain the head pressure on the compressor under low ambient conditions. The bottom of the compressor stays warm, even when the unit is OFF, to keep the lubricating oil warm and separate from the refrigerant.

## **Setting the Thermostat**

Normal settings are between 54 and 58°F. If the unit is equipped with an optional heating coil, enter a separate temperature setting to maintain the lower setting. To prevent the unit from short cycling, the setting between heating and cooling cannot be closer than 2°F. The built-in delay timer (20 minutes) will prevent the unit from switching from heating to cooling too fast.

## **Regulating the Wine Cellar Temperature**

Wine cellars have a temperature gradient of 5 to 10° between floor and ceiling. Change the air flow patterns to raise or lower the temperature in different zones.

To maintain the same temperature throughout the wine cellar, set the thermostat to FAN so the supply fans run continuously while the unit is cooling, as opposed to AUTO.

To switch from continuous to automatic mode, press the FAN button on the thermostat.

To switch back to automatic mode, press the FAN button again.

## **Changing the Air Flow Pattern**

The CellarMate is equipped with single-direction grilles. Rotate the grilles 180° 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 and not enough air flows through the other duct, install a damper or other restriction device into the duct with too much air. This will force more air to flow from the other duct.

# Maintenance

## General Maintenance



**WARNING**



Before performing maintenance on the unit, read the safety information contained within the safety chapter of the CellarMate Manual.

High voltages are present in the cabinets. Turn all power OFF. Use the Lockout/Tagout procedure before opening panels.

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

The CellarMate is designed for minimum maintenance. The refrigerant is hermetically sealed and requires no maintenance. The fans are permanently lubricated and require no maintenance. Some maintenance may be required if there is dust or dirt in the air stream.

## Cleaning the Filters

The evaporator and condenser coils are equipped with reusable, washable air filters. The filters protect the coils from becoming coated or plugged by dust. Clean the filters based on the amount of dust or dirt generated in the cellar or basement.

1. Remove the grille or duct collar on the inlet end of the unit.
2. Remove the filter covering the face of the coil
3. Rinse the filter with warm water and shake off excess water.
4. Inspect and clean the face of the coil.
5. Reinstall the filter.
6. Replace the grille or 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 grille or duct on the evaporator inlet.
3. Remove the filter and inspect the drain pan under the coil.
4. If the drain pan is soiled, pour some hot water mixed with liquid bleach along the length of the pan to flush the dirt down the drain tube.
5. Continue this treatment until the loop in the drain is clean and free of dirt.
6. Reinstall the filter and grille or duct collar.
7. Plug the unit in and restart.

# Maintenance Schedule

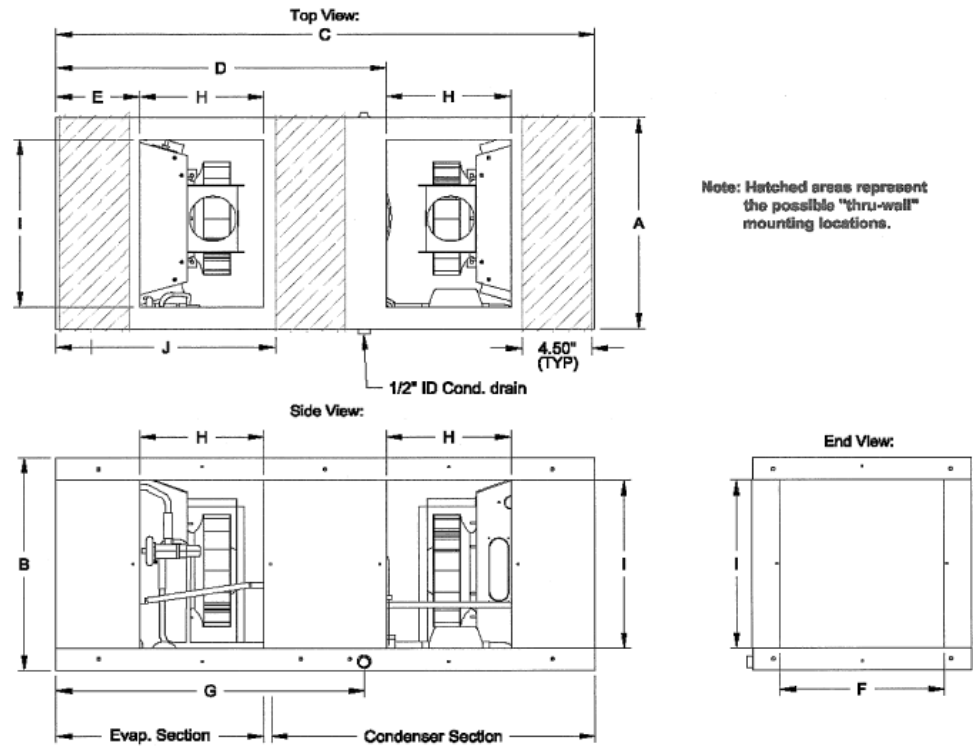
## Monthly

- Check filter and drain trap – clean if needed
- Check for noise or vibration
- Check for short-cycling of the unit

## Annual

- Replace filters if worn or plugged beyond cleaning
- Check evaporator and condenser coils for dirt. Use a vacuum with the brush attachment to clean the coils.
- Clean condensate pan under the evaporator coil by flushing. Keep the drain pan clear of debris.
- Inspect the cabinet for corrosion or rust.
- Inspect for dirt build-up on or inside the unit. Clean the 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 damper and solenoid on humidifier
- Replace humidifier pad

# Dimensions and Components and Components



## Cellarmate Dimensional Data

Model Number		24S025	24S050	24S088	24S200
<b>Dimensions - Nominal - add 0.375" for each grille</b>					
A - Width	Inches	14	22	22	22
B - Height	Inches	14	14	14	18
C - Length	Inches	35	39	39	43
D - Cond. discharge location	Inches	21.25	23.25	23.25	26
E - Evap. discharge location	Inches	5.375	5.375	5.375	5.375
F - Inlet opening width	Inches	10.5	18.5	18.5	18.875
G - Drain outlet location	Inches	19.75	21.75	21.75	24.375
H - Discharge opening width	Inches	8	10	10	11.625
I - Inlet opening Height	Inches	11.132	11.125	11.125	15
J - Location to wall	Inches	14.5	16.5	16.5	18
<b>Weight</b>	Lbs.	80	125	145	195
<b>Refrigerant Charge - 134A</b>	Oz.	19	26	34	50

# Performance and Specifications

## Cellarmate Specifications

Model Number		24S025	24S050	24S088	24S200
<b>Performance</b>					
Nominal Tonnage	Ton	1/4	1/2	1	2
Nominal Compressor	HP	1/3	1/2	1	2.5
Net Cooling Capacity*					
@ 70 Deg F Ambient	BTUH	3300 / 3650	5600 / 6050	8400 / 9100	16200 / 17750
@ 80 Deg F Ambient	BTUH	3000 / 3300	5300 / 5700	7800 / 8450	15200 / 16550
@ 90 Deg F Ambient	BTUH	2800 / 3050	4850 / 5275	7300 / 7900	14100 / 15350
<b>Controls</b>					
Type		Room mounted non-programmable thermostat			
Accuracy		± 2°F			
<b>Evaporator Section</b>					
Fan Motor Size	Watts	75	100	195	240
Rated Air Flow	CFM	235	430	510	740
Air Flow with 25' flex duct	CFM	207	400	485	715
<b>Air-cooled Condenser Section</b>					
Fan Size	Watts	75	100	195	240
Rated Air Flow	CFM	253	400	500	750
Air Flow with 25' flex duct	CFM	220	365	475	720
<b>Water-cooled condenser Section (option)</b>					
Water usage at 40 Deg F rise	GPM	0.30	0.60	1.20	2.50
Pressure drop	PSI	0.40	0.40	0.85	1.20
Pipe connection size (in/out)	Inches	0.50	0.50	0.50	0.50
<b>Heat</b>					
Type		Integral electric heater coil			
Capacity	Watt/btuh	1000/3413	1000/3413	2000/6826	2000/6826
Temperature rise - including fan	Deg F	13.5	8.6	12.0	8.1
<b>Humidifier</b>					
Type		Removable Drip pad with integral fan			
Supply water temp of 60 Deg F	gal./day	1.6			
Supply water temp of 90 Deg F	gal./day	3.5			
Supply water temp of 120 Deg F	gal./day	5.1			
Control		Cellar mounted digital humidistat			
<b>Electrical Requirements</b>					
Power Requirements	V/P/H	115/1/60	115/1/60	230/1/60	230/1/60
Current Draw - Cooling mode	Amps	8.6	11.9	9.0	16
Current Draw - Heating mode	Amps	9.4	9.6	9.6	10
Minimum Circuit Size	Amps	15	15	15	20
Optional Low Ambient	Amps	0.4	0.4	0.2	0.2
Optional Humidifier	Amps	0.3	0.3	0.2	0.2
<b>Typical Testing Data (Factory)</b>					
Head Pressure	psig	159	140	140	138
Suction Pressure	psig	40	30	25	27
Condenser Inlet temperature	Deg F	81	74	79	78
Condenser Outlet temperature	Deg F	98	98	99	107
Evaporator Inlet temperature	Deg F	56	55	57	55
Evaporator Outlet temperature	Deg F	44	44	43	46
Agency Approval(s)		ETL - Conforms to UL Std. 1995, Can/CSA C22.2 No 236			

\* 1. Net cooling capacity @ cellar temp & humidity of 55 Deg F & 60%RH / 60 Deg F & 60% RH and at rated airflow. Reduce capacity by 3% for each 10% reduction in either condenser or evaporator airflow, 5% for both.

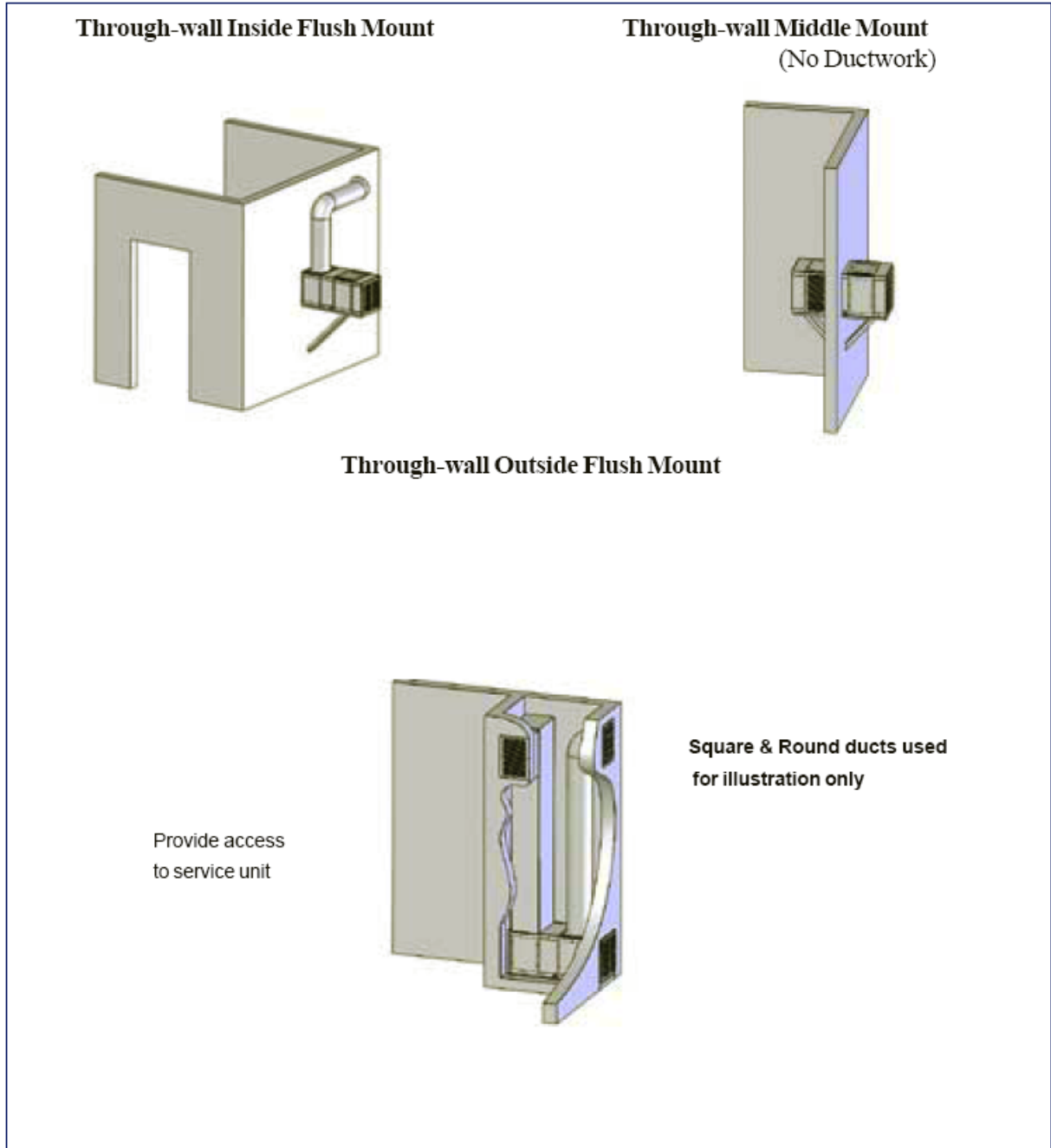
2. Cellarmate reserves the right to make changes to this document without prior notice at its sole discretion.

3. All ratings @ sea level.

# Typical Mounting Arrangements

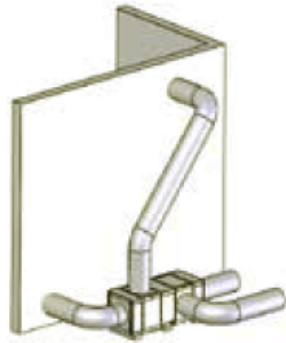
The following illustrations are suggested mounting arrangements. These illustrations are not intended to be complete and detailed installation drawings.

## Through the Wall Mounts



# Ducting Options

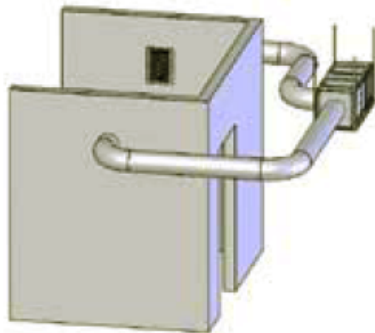
## Remote Mount On Floor



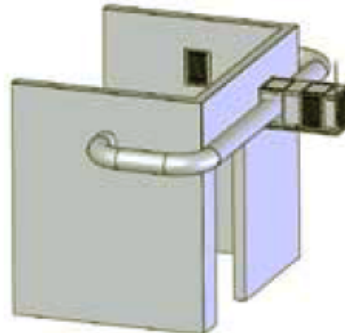
Condenser inlet and exhaust - to outside

## Ceiling Mounts

### Ceiling Mount

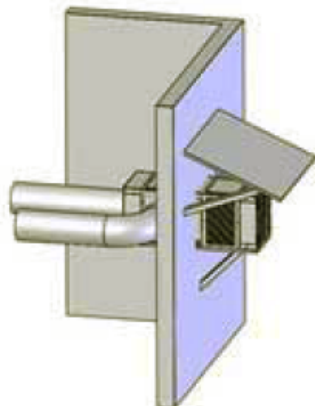


### Through-wall Ceiling Mount with Dual Supply

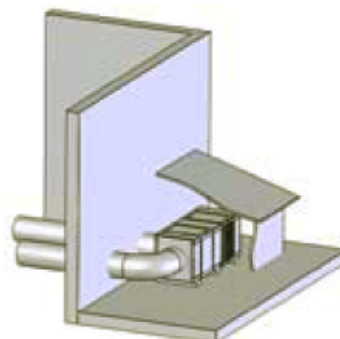


## Outside Mounts

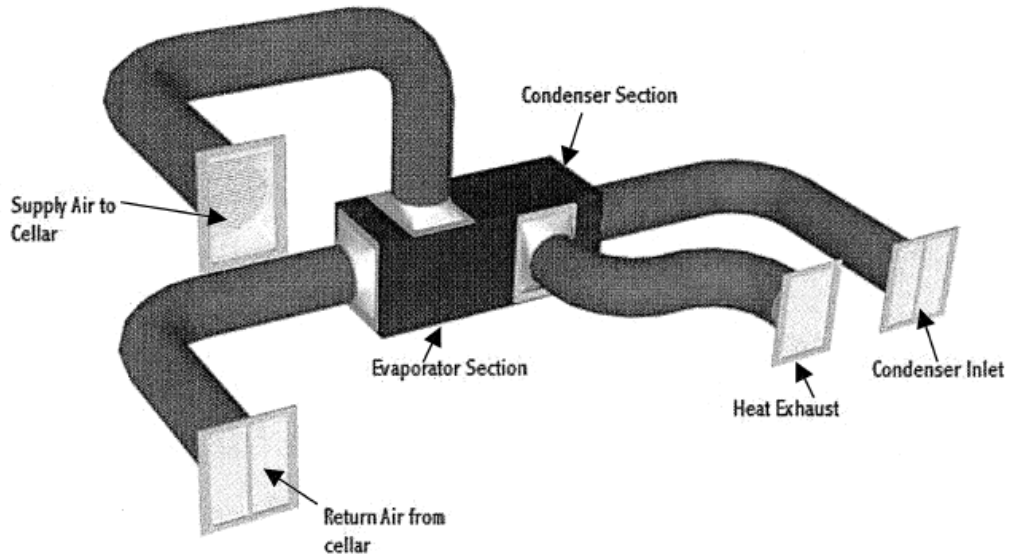
### Outside Through-wall Mount



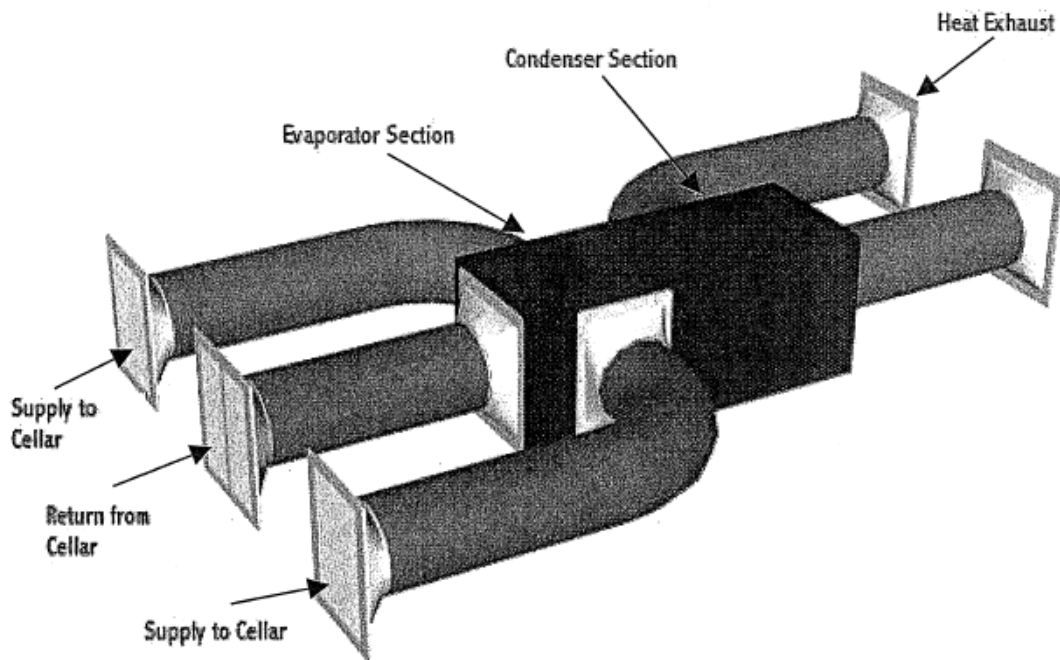
### Outside Remote Mount



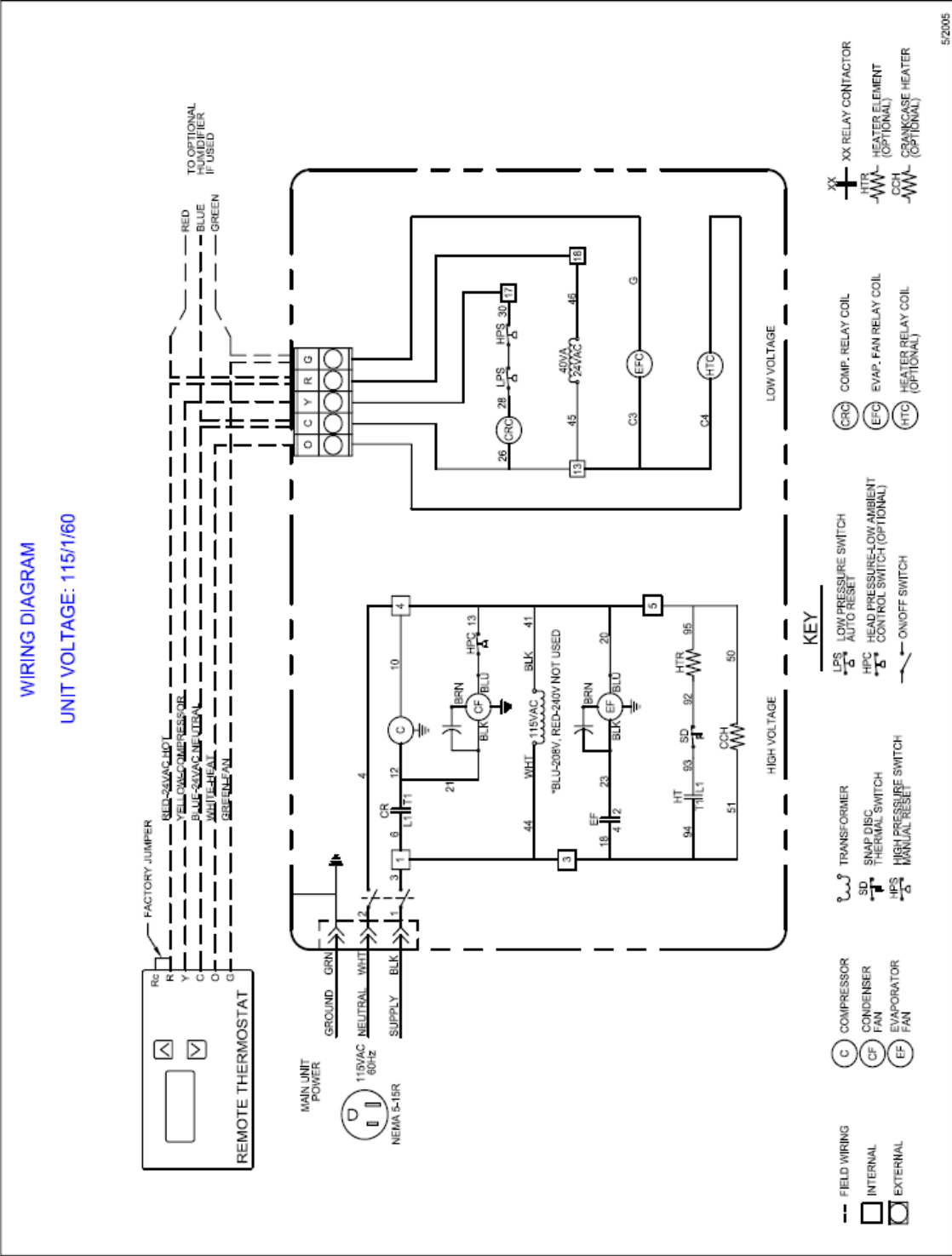
## Single Outlet Duct Installation



## Dual Outlet Duct Installation

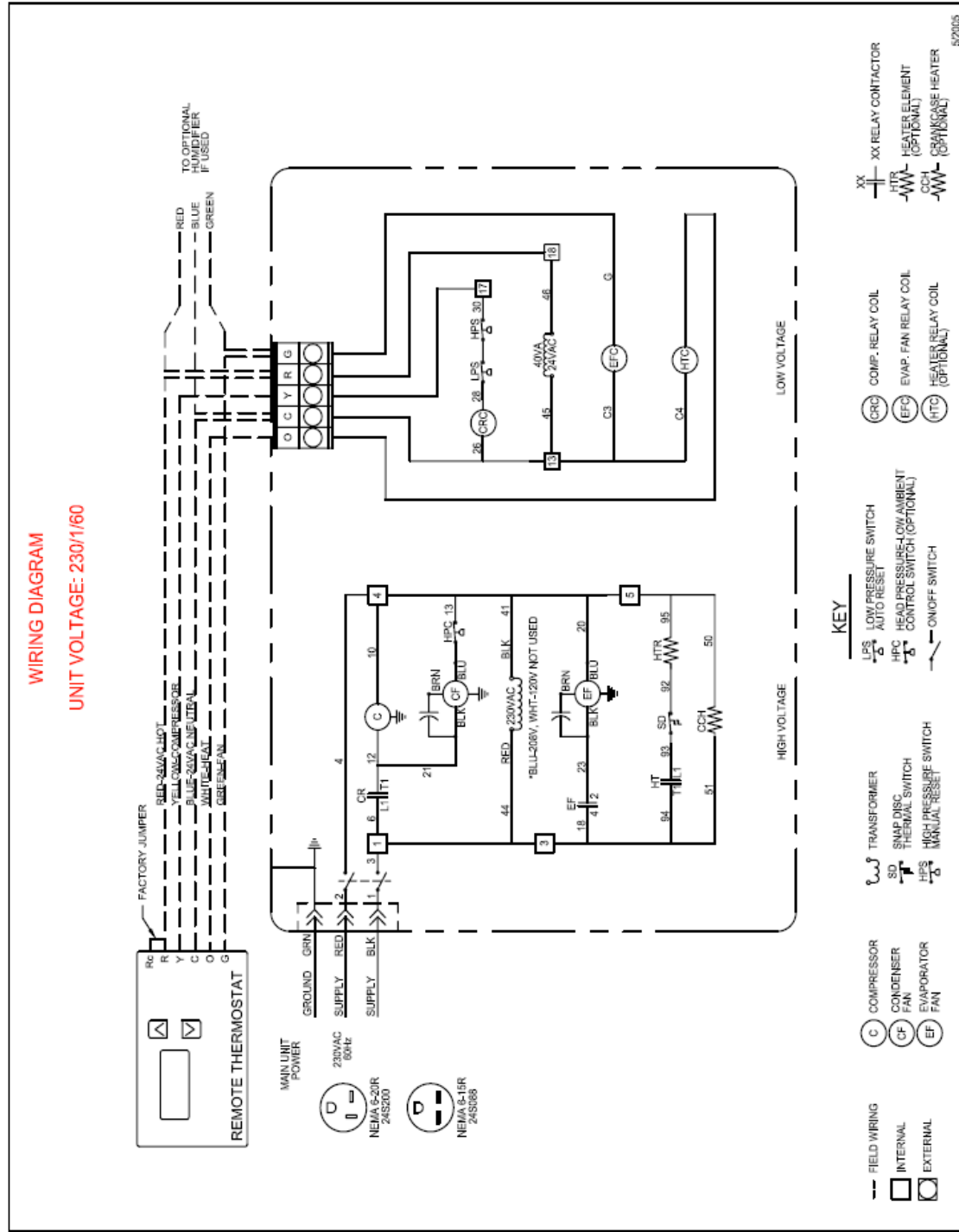


# Wiring Diagram – Models 025 and 050



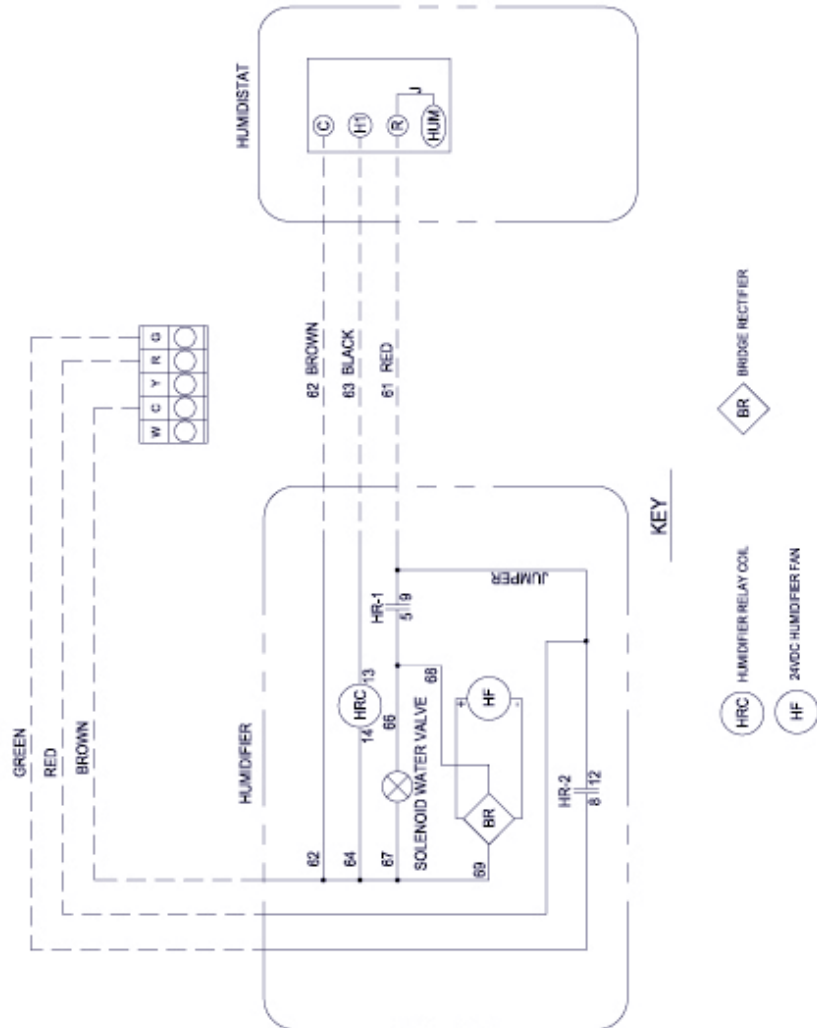
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# Wiring Diagram – Models 088 and 200



# Wiring Diagram – Humidifier

WIRING DIAGRAM  
HUMIDIFIER  
(OPTIONAL)



# Troubleshooting

## 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 before calling a service technician.

### Start Up

POSSIBLE CAUSE	SOLUTION
Loose, improper, or defective thermostat or humidistat wiring	Check power and thermostat or humidistat wiring.
Incorrect thermostat or humidistat (optional) settings	Check the thermostat and optional humidistat setup for the application. Read the thermostat troubleshooting guidelines in the Thermostat Installation and Operating Guide.
Changed settings on the thermostat	The internal timer did not complete the timed delay. Follow the manufacturer's instructions to override the timer.
Blockage of the evaporator or condenser air flow. If the air flow becomes blocked, the manual reset high limit switch opens and shuts the unit off.	Turn the rocker switch to OFF Check for obstruction of the air flow Remove the obstruction Inspect the air filter for dirt and dust Clean or replace the filter
Unit shuts off	Locate the high pressure switch near the compressor (a cylindrical device piped into the refrigeration system with two wires and a red button on the top) Push the button until it locks into place. Push the rocker switch to restart the unit

## **Unit Does Not Start Up**

### **Power Switch Light is Off**

<b>Possible Cause</b>	<b>Solution</b>
Switch not on	Turn on switch
No power to outlet	Check circuit breaker and wiring
Unit not plugged in	Plug in the unit

### **Power Switch Light is On and the Thermostat Light is OFF**

<b>Possible Cause</b>	<b>Solution</b>
No power to thermostat	Check wiring for loose, broken, or frayed connections. Check transformer for 24v output to thermostat

### **Power Switch Light is ON and the Thermostat Light is OFF**

<b>Possible Cause</b>	<b>Solution</b>
Thermostat is not setup properly	Check thermostat setup in the guide Press fan ON switch to check evaporator fan, only
Compressor not operating	High pressure switch open (button up)
Condenser air flow is blocked	Remove blockage Clean filter and coil (if needed)
HP switch is open	Reset HP switch (push button in)

## **High Pressure Switch Has Shut the Unit Down**

<b>Possible Cause</b>	<b>Solution</b>
Head pressure in unit is too high because an obstruction is restricting air flow through the condenser	Remove the obstruction in the duct or grille or clean the filter. Restart the unit using the high pressure switch near the compressor (a cylindrical device piped into the refrigeration system with two wires and a red button on the top) and push in the button until it locks into position again. Push the rocker switch to restart the unit

## **Unit is Operating and Blows Evaporator Air, but the Supply Air is Not Colder Than the Return Air from the Cellar**

<b>Possible Cause</b>	<b>Solution</b>
Thermostat not set up properly	Check thermostat set up in the manufacturer's thermostat guide.
Compressor not operating	High pressure switch open (button up)
Condenser air flow is blocked	Remove blockage, clean filter and coil (if needed)
Head Pressure (HP) switch is open	Reset HP switch (push button in)

## **Problems Controlling Cellar Temperature**

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>Cellar Temperature is Too Low (Below 51°) When Unit is Running</b>	
<b>Possible Cause</b>	<b>Solution</b>
Thermostat set too low on cooling	Reset thermostat to higher cooling temperature
Heating coil (optional) not operating	Reset thermostat to higher heating temperature
Thermostat not controlling temperature	Wiring integrity compromised (shorted), replace wiring

<b>Cellar Temperature is Too Low (Below 51°) When Unit is Not Running</b>	
<b>Possible Cause</b>	<b>Solution</b>
Too much heat loss to adjacent spaces	Increase insulation around the ductwork and doorways Add heater

### **Cellar Temperature is Too High, but Supply Air is Cold**

<b>Possible Cause</b>	<b>Solution</b>
Not enough evaporator air flow	Remove blockage in supply or return ductwork Check and clean filter and coil Coil frozen—shut-off unit for two hours
Cellar loads are too high	Install additional insulation Replace with larger unit

### **Cellar Humidity**

#### **Humidity Too Low or Supply Air is Too Cold, Without Optional Humidifier**

<b>Possible Cause</b>	<b>Solution</b>
Not enough evaporator air flow	Remove blockage in supply or return ductwork Check and clean filter and coil Coil frozen—shut-off unit for two hours
Defective Thermal Expansion Valve	If under warranty, call for service If not under warranty, call a refrigeration technician

#### **Humidity Too Low Without Optional Humidifier**

<b>Possible Cause</b>	<b>Solution</b>
No moisture being added to cellar	Add CellarMate humidifier or a room humidifier
Defective Thermal Expansion Valve	If under warranty, call for service If not under warranty, call a refrigeration technician

### Humidity Too Low With Optional Humidifier

Possible Cause	Solution
Humidifier not operating	Check wiring for loose, broken, or frayed connections Check humidistat setup Check for water flow & solenoid valve operation Check damper operation
Humidifier operating	Check for water being hot Check drip pad—replace if scaled Inadequate vapor barrier around cellar

### Humidity Too High When Unit is Running, But Not Cooling

Possible Cause	Solution
Compressor	Check and reset high limit switch Clear blockage of condenser air flow Ambient temperature above 95°F

### Humidity Too High When Unit is Not Running

Possible Cause	Solution
Unit needs to run to dehumidify	See Unit Not Operating section of the Troubleshooting section

### Humidity Too High When Unit is Running and Cooling

Possible Cause	Solution
Too much evaporator air	Add some resistance to air flow. Install a damper in the ductwork.
Too much moisture in cellar	Poor vapor barrier installation Humidifier shutter is stuck open Humidifier valve is stuck open Humidifier is set too high

**Unit Operates but the Power Switch Light is Not On**

**Possible Cause**

**Solution**

Bulb is burned out

Replace bulb

**Unit is Leaking Water**

**Possible Cause**

**Solution**

Trap plugged

Clean trap

Condensate pan plugged

Remove blockage and clean

Unit not level

Level with shims

**Unit is Running Properly, but the Sound of Unit is Objectionable**

**Possible Cause**

**Solution**

Noise is from air flow

Redirect air flow

Add baffles

Add insulated ductwork

Noise is from unit

Add sound baffle between unit and occupied space

**High Pressure Switch in the Refrigeration System Switch Shuts off Unit**

**Possible Cause**

**Solution**

The head pressure is above 275 psi

Restricted air flow through the condenser caused by an obstruction blocking the air flow in the ductwork or grille

Dust covering the filter

Contact a refrigeration technician

## Advanced Troubleshooting

### IMPORTANT

This section is for qualified refrigeration service technicians, only. The technician should repeat the previous troubleshooting steps *before* these more technical solutions.

#### Evaporator Coil is Freezing

Possible Cause	Solution
Charge too low	Check sight glass Check for leaks Add refrigerant
TXV malfunctioning	Repair or replace

#### High Pressure Switch Keeps Opening 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/Hour

Possible Cause	Solution
Thermostat malfunctioning	Refer to the thermostat guide
Low suction pressure	Check low pressure switch 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

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

# CellarMate Warranty

## General

CellarMate LLC warrants to the original buyer its goods and all parts thereof to be free from defects in material and workmanship for one year from the date of invoicing assuming NORMAL USE AND SERVICE.

## Liability

CellarMate LLC 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 90 days from the date of invoice, CellarMate LLC 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 LEU OF ANY OTHER OBLIGATION OR LIABILITY, INCLUDING LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. CellarMate LLC will not be responsible for any costs or liability whatsoever resulting from improper installation or service of its equipment. In the event that CellarMate LLC 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 product. No person or representative is authorized to change these warranties or assume any other obligations or liabilities for CellarMate LLC 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 CellarMate LLC 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 CellarMate LLC regarding this invoice and Purchaser expressly acquiesces to the jurisdiction of the federal and state courts of the United State.

## 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 other 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 CellarMate LLC 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.

## Glossary

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

**BTU/H** – Cubic feet per minute. A unit of measure for the amount of air handled by the fan.

**Cellar** – The wine storage area being conditioned by the CellarMate LLC.

**Condensate/Condensation** – The water formed out of the air when it is cooled below a certain temperature (called the 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.

**Discharge Air** – The air leaving the evaporator condenser section of the CellarMate LLC unit.

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

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

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

**Heat Gain/Loss** – The amount of cooling or heating expressed in BTU/H gained or lost in or out of the wine cellar to the ambient space. The CellarMate LLC must offset this load.

**Inlet Air** – The air entering the evaporator and condenser sections of the CellarMate LLC unit.

**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 in the cellar.

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

**SP** – Static Pressure. Unit of measure (in 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 from the discharge of the evaporator coil.