



Control the Elements



***Owner's Manual –
3400H Houdini Cooling Unit***



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CONGRATULATIONS!

Thank you for purchasing a new CellarPro cooling system.

Please take a minute to read through this Owner's Manual before you unpack, install and turn on your Cooling Unit.

If you have any questions about your new cooling unit, it is likely that you will find the answers in this Owner's Manual. We also have more information on our website, including the latest version of the Owner's Manual, cellarpro.com.

If you still have questions, please don't hesitate to contact your dealer or CellarPro directly. We can be reached during normal business hours at 1.877.726.8496. You also may contact us anytime via email at info@cellarpro.com.

Contact Information:

CellarPro Cooling Systems

1445 N. McDowell Blvd

Petaluma, CA 94954

877.726.8496

Email: info@cellarpro.com

Website: cellarpro.com

Serial Number* _____

*We recommend that you take a minute to fill-in your CellarPro serial number above. The serial number can be found on the printed label on the side of your cooling unit, which may not be accessible after you install your cooling unit. You may need this serial number in the event your cooling unit needs service.

**Don't forget to register your cooling unit warranty at cellarpro.com/register,
or scan the following QR code:**





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I. Prior to Installation

- **Test the unit before installing it.**

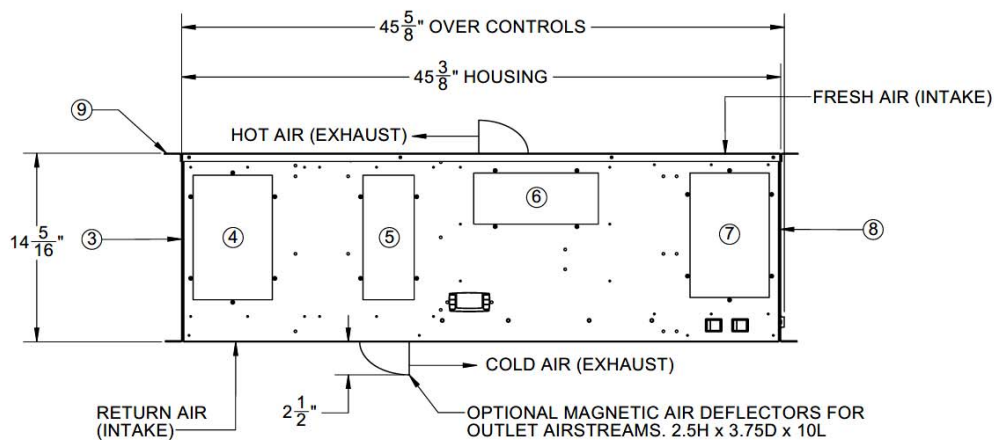
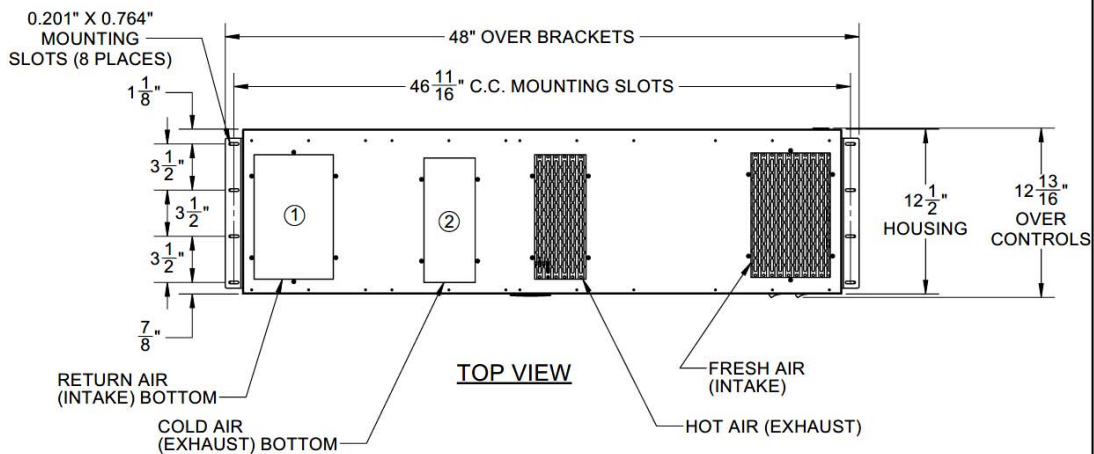
1. Remove the unit from the box. **SAVE THE BOX AND PACKING MATERIALS.**
2. Plug in the power cord. The cooling system is programmed with a **3-Minute Delay at Startup** to protect its internal components
3. **Let the unit run on a hard, flat surface for no more than 10 minutes.** The cold air intake and discharge is at the bottom left of the cooling unit. Make sure these openings are not blocked when testing.
4. Make sure that **both fans in the cooling unit are spinning**, by confirming that airflow is exiting from the exhaust vents at the top and the bottom of the cooling unit.
5. Confirm that the cooling unit is **discharging cold air** from the bottom that is approximately 10°F colder than the temperature on the digital display.
6. Turn the unit “off” and install.

We recommend that you wait 24 hours before operating your CellarPro cooling unit. The delay will protect the unit from internal damage that could arise if the unit was shipped, stored, or tilted on its side.

II. Specifications & Requirements

- **Specs and Cut Sheets**

Dimensions (inches)	Weight (lbs)	Unit Amp Rating
Without Ducting 46w x 13d x 14.5*h (inches) * air diverter adds 2.5" height	107	10.26 Amps
As Ducted (hot side) 64w x 13d x 32.5*h (inches) * air diverter adds 2.5" height	111	10.26 Amps
As Ducted (cold side) 64w x 13d x 32.5*h (inches) * air diverter adds 2.5" height	111	10.26 Amps



FRONT VIEW

NOTES:

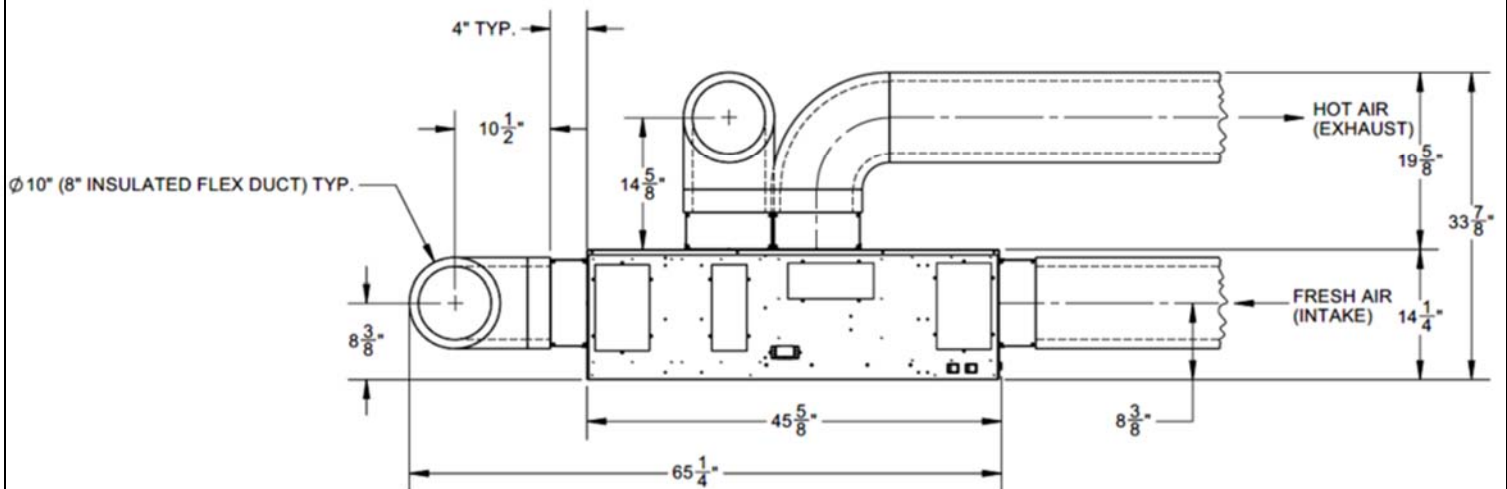
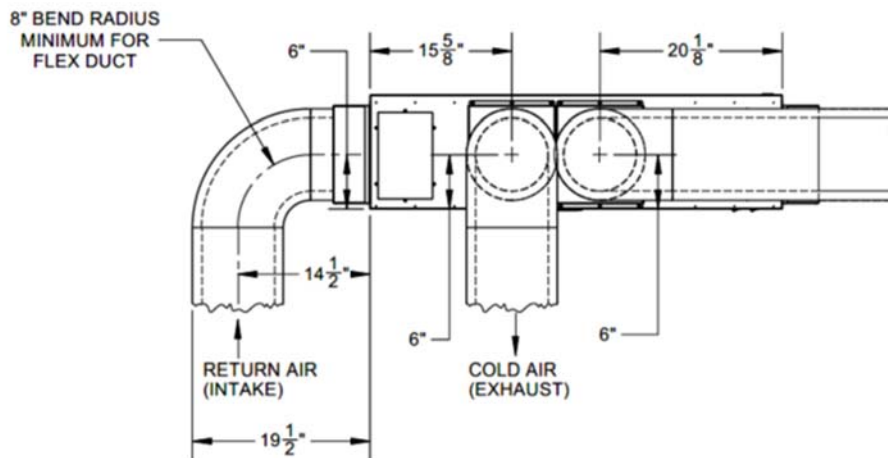
1. ALTERNATE RETURN AIR (INTAKE) - TOP
2. ALTERNATE COLD AIR (EXHAUST) - TOP
3. ALTERNATE RETURN AIR (INTAKE) - LEFT END
4. ALTERNATE RETURN AIR (INTAKE) - FRONT*
5. ALTERNATE COLD AIR (EXHAUST) - FRONT*
6. ALTERNATE HOT AIR (EXHAUST) - FRONT* AND REAR OPTIONS
7. ALTERNATE FRESH AIR (INTAKE) - FRONT*
8. ALTERNATE FRESH AIR (INTAKE) - RIGHT END
9. TWO MOUNTING BRACKETS SHIP LOOSE WITH UNIT. UNIT HAS MOUNTING BRACKET HOLES FOR INSIDE CELLAR OR ABOVE CELLAR MOUNTING. REFER TO THROUGH CEILING MOUNTING DIAGRAM FOR OTHER MOUNTING OPTIONS

* THE FRONT GRILL MUST BE REMOVED IF USING FRONT VENT OPTIONS. REPLACE ALL SCREWS AFTER REMOVING GRILL.

3400H OVERALL DIMENSIONS AND AIR VENT LOCATIONS

2752A_R00

V6.25



3400H AS DUCTED



- **Placement**

CellarPro 3400H Houdini cooling units can be installed in a variety of configurations, as follows:

- Inside the cellar, attached to the ceiling, with the hot air exhaust and intake vented through the ceiling to the space above the cellar
- Directly above the cellar, with the cold air exhaust and intake vented down through the ceiling (venting should be sealed and insulated to eliminate infiltration and heat loss)
- Within the ceiling joists above the cellar, with the hot side exposed to the space above the cellar, and the cold side exposed to the cellar
- Any of the above, with the hot side ducted up to 50 equivalent feet per side
- Outside the cellar, with the cold side ducted up to 50 equivalent feet per side

We recommend at least 8" of clearance opposite all points of airflow.

- **Ambient Environment**

The fresh air intake (on the hot side of the cooling unit) must have access to cool air ranging from 40F to 95F. With the addition of our compressor heater, the lower limit of the intake temperature can drop to 20F, with the addition of our fan cycling switch (and the compressor heater), the lower limit of the and intake temperature can drop to -20F.

If the hot air exhaust will be directed to a common space as the fresh air intake, the space will need to be at least as large as the wine cellar to ensure that the hot exhaust is sufficiently dissipated before the unit pulls its fresh air.

CellarPro cooling units are not designed to add heat to the cellar space, so if temperatures inside the cellar drop below proper wine storage temperatures, the cooling unit cannot create heat inside the cellar.

- **Insulation and Airtight Construction**

CellarPro cooling units are designed to be installed inside wine cellars that have proper insulation, moisture barriers and an airtight seal from the environment outside the cellar. Interior walls and floor should have a minimum of R-11 insulation, and a vapor barrier on the warm side of the insulation. The ceiling should have a minimum of R-19 insulation and a vapor barrier on the warm side of the insulation. Doors also should be insulated and tightly sealed with weather stripping around the perimeter of the door. Surface-mounted fixtures are recommended over recessed lighting, which can allow air to leak into the cellar.

It is important that all walls, joints, doors and windows, electrical outlets and/or switches, pipes, vents, and light fixtures be sealed to prevent air and moisture from entering the cellar. If there is a leak in the cellar, the cooling unit will build up excess condensation.



- **Sizing**

Our 3400H Houdini cooling unit is sized to handle cellars with lots of glass, within certain limitations. For example, the unit is sized to handle cellars with the following attributes:

For example, assuming 75F ambient temperature, R13 insulation in the non-glass walls and no ducting, the 3400H would work in the following cellars:

<u>Cellar Dims</u>	<u>Cellar Cu Ft</u>	<u>Glass Sq Ft</u>	<u>Glass Pane</u>	<u>Cellar Temp</u>	<u>BTUH</u>
13'w x 2 1/2'd x 9'h	293	117 (Front Wall)	Single	60F	3460
15'w x 2 1/2'd x 10'h	375	150 (Front Wall)	Double	55F	3308
15'w x 2 1/2'd x 10'h	375	200 (Front & Side Walls)	Double	58F	3326

- **Condensate Management System**

CellarPro 3400H Houdini cooling units are equipped with a condensate management system, which includes an oversized stainless-steel pan and a thermostatically controlled electric heating element. The cooling unit can be configured to include a condensate drain line for overflow moisture at an additional cost.

- **Bottle Probe**

Our bottle probe, inserted in a bottle filled with liquid (we recommend 90% water and 10% rubbing alcohol), must be used with all 3400H Houdini cooling units. The bottle with the probe must be located inside the wine cellar, in the upper third of the cellar and in a location with good airflow, not buried in the back of the wine racks.

IMPORTANT NOTE: The temperature differential (HY) factory setting is “4”. This setting must be changed to “1” when using the bottle probe in liquid. Refer to the “Advanced Operation” section for instructions on how to change the HY setting.

- **Fan Speeds**

CellarPro 3400H Houdini cooling units include dual variable high-velocity fans, which can be set independently to achieve desired results, as follows:

- Variable fan speed for the cold side provides cooling flexibility
 - o Low fan speed: 3338 BTUH @ 55F / 47F lowest achievable cellar temperature
 - o High fan speed: 3492 BTUH @ 55F / 47F lowest achievable cellar temperature
- Variable fan speed for the hot side provides the choice between maximizing performance vs minimizing noise
 - o Low fan speed: 56 dBA / 85F maximum intake temperature
 - o High fan speed: 61 dBA / 95F maximum intake temperature



- Ducting on one or both sides of the cooling unit is possible without the need for an auxiliary fan

- o Cold side

- Up to 100 equivalent feet (50' per duct) with 8-inch insulated ducting
 - Intake from the left / exhaust from the top (Default)
 - May also intake from the bottom, front, or top
 - May also exhaust from the bottom or front

- o Hot side

- Up to 100 equivalent feet (50' per duct) and 85F maximum intake temperature (no auxiliary fan required)
 - Up to 200 equivalent feet (100' per duct) and 95F maximum intake temperature (requires auxiliary fan)
 - Intake from the right / exhaust from the top
 - May also intake from the front or top
 - May also exhaust from the front or rear

- o Ducting requires CellarPro duct equipment (sold separately)

- **Cooling Unit Vent Configurations**

CellarPro 3400H Houdini cooling units provide maximum flexibility for positioning air intake and exhaust on the cold side and the hot side of the cooling unit, which allows the unit to be placed inside or atop the cellar.

- Choice of airflows on the cold side

- o Intake from bottom, front, top, or left side
 - o Exhaust from bottom, front, or top
 - o Air deflector optional

- Choice of airflows on the hot side

- o Intake from front, top, or right side
 - o Exhaust from front, top, or rear
 - o Air deflector optional

CellarPro cooling units create significant hot air which must be exhausted into an appropriately sized space so that the heat can dissipate. If the space is constrained and/or too small, the heat will not dissipate and/or may create back-pressure. In this event, the cooling unit may be forced to re-circulate its hot air exhaust and/or it won't be able to pull fresh air across the condenser coils. If this happens, the cooling unit will go into HA2 alarm mode, and the cooling unit's ability to create cold air inside the cellar will be compromised.

The hot exhaust and fresh air intake must be directed to a space that is at least as large as the wine cellar, unless the two airflows are ducted to separate spaces.



- **Ducting – Hot Side**

We offer duct kits that allow the fresh air intake and/or hot exhaust to be ducted up to 100 equivalent feet each with a minimum of 8" diameter ducting from start to finish, or 200 equivalent feet each with our auxiliary fan and 8" diameter ducting from start to finish. Please only use genuine CellarPro duct adapters and the HIGH fan speed on the hot-side fan always should be used when ducting the hot side of the cooling unit.

Avoid the following when ducting our cooling unit, which could cause permanent damage to your cooling unit:

- Use custom duct adapters instead of the CellarPro duct adapters
- Reduce the ducting below 8" diameter
- Use hot-side fan at low fan speed
- Exceed the equivalent length limits

- **Ducting – Cold Side**

Using the same duct kits described in the previous section, 3400H Houdini cooling units can have the cold air exhaust and return air intake ducted up to 50 equivalent feet each using 8" diameter **insulated** ducting from start to finish. (Unlike the hot side, however, the cold side distance cannot be extended with an auxiliary fan). Please only use genuine CellarPro duct adapters and the HIGH fan speed on the cold-side fan when ducting the cold side of the cooling unit.

Avoid the following when ducting our cooling unit, which could cause permanent damage to your cooling unit:

- Use custom duct adapters instead of the CellarPro duct adapters
- Use ducting that is insulated less than R6
- Reduce the ducting below 8" diameter
- Use cold-side fan at low fan speed
- Exceed the equivalent length limits

- **Fresh Air Intake Filter**

When the fresh air intake of the cooling unit cooling unit IS NOT DUCTED, the provided magnetic filter screen should be installed over the intake vent plate. The size of the filter is 7-1/2" x 10-15/16" and can be cleaned with warm water. If the unit is mounted inside the cellar, make sure the fresh air intake opening in the ceiling is large enough for filter removal, or relocate the filter to the opposite side of the ceiling and secure in place.

For systems where the hot side fresh air intake IS DUCTED, a register grill with a filter screen should be used. The size of the filter is 12" x 12" and attaches to the inside of a 12" x 12" register grill (#27806). **The register grill should be installed over the inlet of a 12" high x 12" wide x 8" diameter duct boot adapter (not provided).**



Power Requirements

CellarPro cooling systems should be plugged into a dedicated non-GFI outlet connected to a 15-amp circuit. The cooling unit uses approximately 10.26 amps during its “on” cycle.

Several variables, including the minimum set point, the temperature in the ambient environment, the insulation of the cellar, and the thermal mass inside the cellar, will affect the cooling unit’s runtime. It is normal for the cooling unit to run up to 75 percent of the time to maintain proper conditions inside the cellar.

Select a power receptacle (Side or Rear) and plug the provided power cord into that receptacle. Plug the other end of the power cord into a dedicated 15-amp circuit. A surge-protected circuit is recommended. Set the power selector switch to energize the appropriate receptacle used (Side or Rear).

III. Installation Instructions

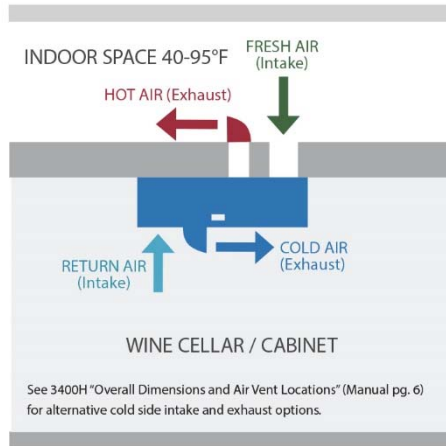
- **TEST THE UNIT BEFORE INSTALLING IT**



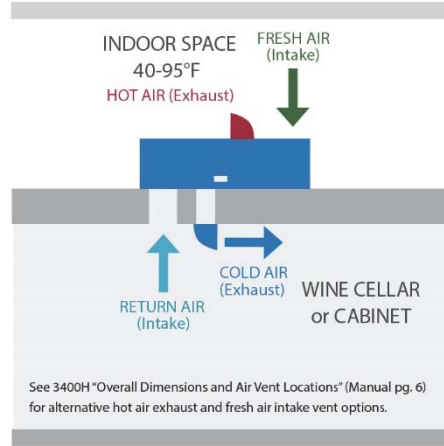
1. Remove the unit from the box. **SAVE THE BOX AND PACKING MATERIALS.**
 2. Plug in the power cord. The cooling system is programmed with a **3-Minute Delay at Startup** to protect its internal components
 3. **Let the unit run on a hard, flat surface for no more than 10 minutes.** The cold air intake and discharge is at the bottom left of the cooling unit. Make sure these openings are not blocked when testing.
 4. Make sure that **both fans in the cooling unit are spinning**, by confirming that airflow is exiting from the exhaust vents at the top and the bottom of the cooling unit.
 5. Confirm that the cooling unit is **discharging cold air** from the bottom that is approximately 10°F colder than the temperature on the digital display
 6. Turn the unit “off” and install.
- CellarPro cooling units must always be mounted in the upright position
 - Each airflow opening (intake and exhaust) should have a minimum of 8” of clearance to allow air to circulate freely into and out of the cooling unit
 - Ideally the cold air exhaust and return air intake will be located near the top of the cellar. Because cold air falls, it is best to exhaust the cold air at the top of the cellar, and because warm air rises, it is best to catch the warm air when it first begins to accumulate at the top of the cellar.
 - Once the cooling unit is installed, all cracks and gaps between the cooling unit and the cellar should be sealed.
 - Mounting brackets should be attached to the sides of the cooling unit, and then used to attach the cooling unit to the ceiling inside the cellar, to the floor above the cellar, through the ceiling of the cellar, or in a remote location with the addition of our duct adapters

- The cooling unit can be configured in several ways, with or without ducting, as shown below:

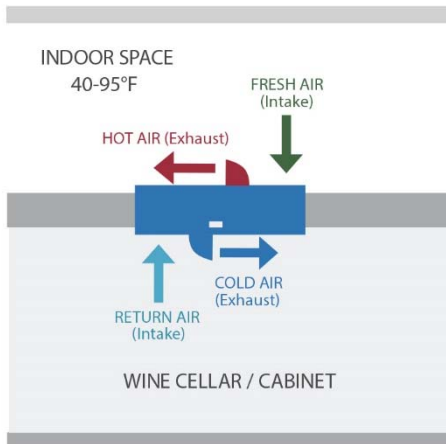
1. Inside the Cellar



2. Above the Cellar

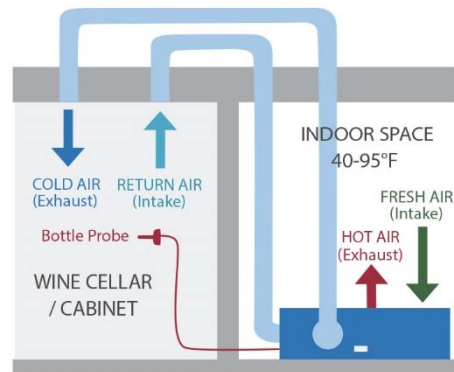


3. Inside the Ceiling

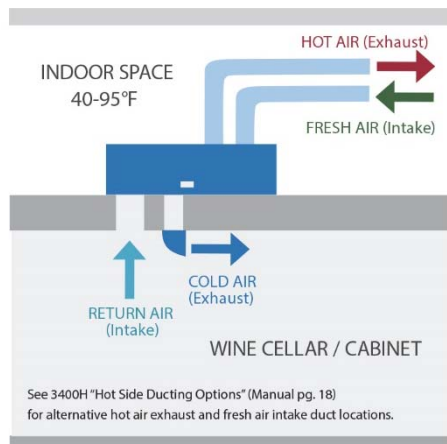


4. Cold-Side Ducted

See 3400H "Cold Side Ducting Options" (Manual pg. 20) for alternative cold side ducting locations.

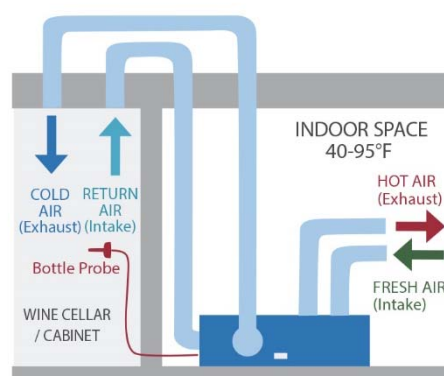


5. Hot-Side Ducted



6. Hot and Cold Sides Ducted

See 3400H "Hot Side Ducting Options" (Manual pg. 18) and "Cold Side Ducting Options" (Manual pg. 20) for alternative ducting locations.

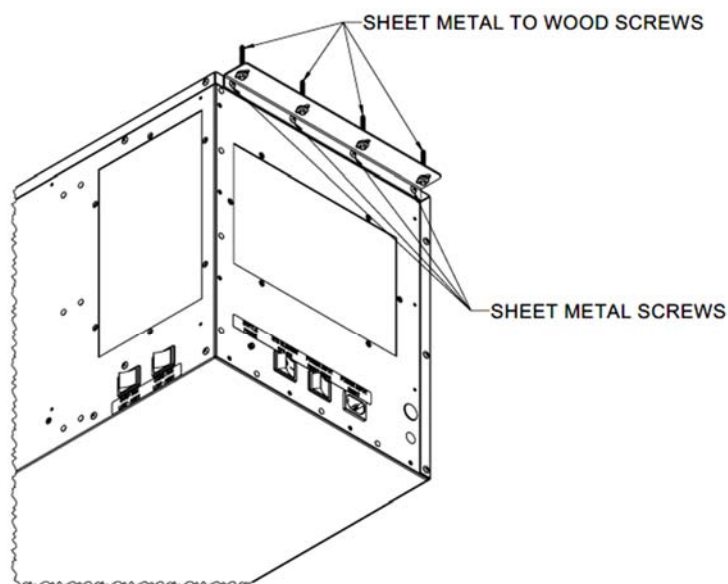


• Installation Notes

The unit is shipped with standard equipment that includes 2 mounting brackets and a fresh-air filter screen, as discussed below.

1. Mounting BELOW the Ceiling:

- Start by removing the 8 screws on the sides of the cooling unit (4 screws on each side along the top edge of the cooling unit, as shown in the drawing below). Place a mounting bracket over the open screw holes, one bracket per side, then attach the #8 x 5/8" sheet metal screws included with the unit. Attach the brackets to the cooling unit using the round holes, so that the wide slot openings are perpendicular to the cooling unit. Once the brackets are attached to the cooling unit, use the eight #9 x 1 1/2 sheet metal to wood screws (included), to attach the brackets to framing in the ceiling.
- NOTE: This unit is heavy. Therefore, the mounting brackets must be screwed into wood with a specific gravity greater than or equal to 0.38 with thickness of at least 1-1/2 inches. Alternatively, #8 machine screws with washers and nuts may be used for mounting as long as the material to which the mounting brackets are bolted is strong enough to support the weight of the unit. Reference Section II for weight specifications.



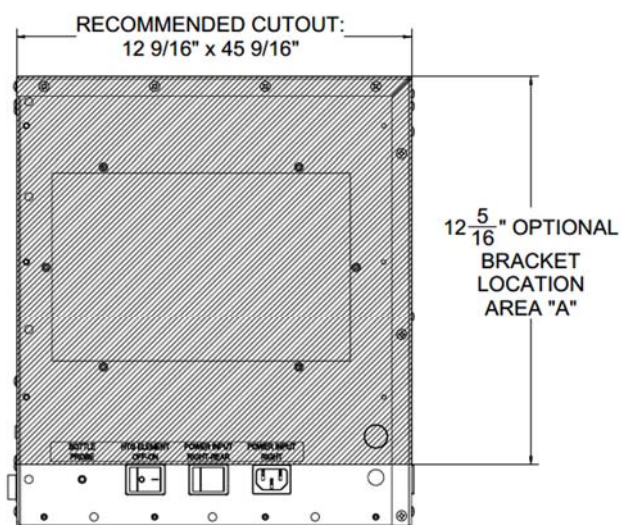
RIGHT SIDE BELOW-CEILING MOUNTING

- In this configuration, 2 sealed openings in the ceiling will need to be created for the hot exhaust and the fresh air intake, and the filter should be placed **above the opening for the fresh air intake**, where it will be most conveniently accessible.
- We offer an optional air deflector that can be placed below the cooling unit, using its magnets, to direct the cold-air discharge to the right, away from the return air opening. A deflector also can be purchased to direct the hot air exhaust away from the fresh air intake atop the cooling unit if necessary.



2. Mounting IN the Ceiling:

- Start by cutting out a hole in the ceiling that measures 45 9/16"W x 12 9/16"D. **Slide the unit into the hole from below**, and mark the desired location of the mounting brackets along the sides of the cooling unit. Take care to ensure that the mounting brackets are in the same position on both sides of the cooling unit, so that it is level when installed. **The brackets can be located anywhere in area "A" on the sides of the cooling unit, as shown in the diagram below, to achieve desired height of the unit inside or outside the cellar. Do not attempt to drill in the front or the rear of the unit.** Drill 1/8" holes in the sides of the cooling unit (4 holes per side) for attaching the mounting brackets. Use a drill bit with a stop at 1" depth to prevent damage to internal components. Using the included #8 x 5/8" screws, attach the brackets to the cooling unit using the round holes, so that the wide slot openings are perpendicular to the cooling unit. Once the brackets are attached to the cooling unit, use the eight #9 x 1-1/2 wood screws (included), to attach the brackets to framing in the ceiling. If framing to support the sides of the cooling unit doesn't exist, you will need to add framing blocks in the ceiling for attachment of the mounting brackets.
- NOTE: This unit is heavy. Therefore, the mounting brackets must be screwed into wood with a specific gravity greater than or equal to 0.38 with thickness of at least 1-1/2 inches. Alternatively, #8 machine screws with washers and nuts may be used for mounting as long as the material to which the mounting brackets are bolted is strong enough to support the weight of the unit. Reference Section II for weight specifications.
- In this configuration, the filter will be **attached to the fresh air intake atop the cooling unit** using the magnets on the filter frame.
- The optional air deflector would be placed below the cooling unit, using its magnets, so that it directs the cold-air discharge to the right, away from the return air opening. An additional deflector also can be purchased to direct the hot air exhaust away from the fresh air intake if necessary.

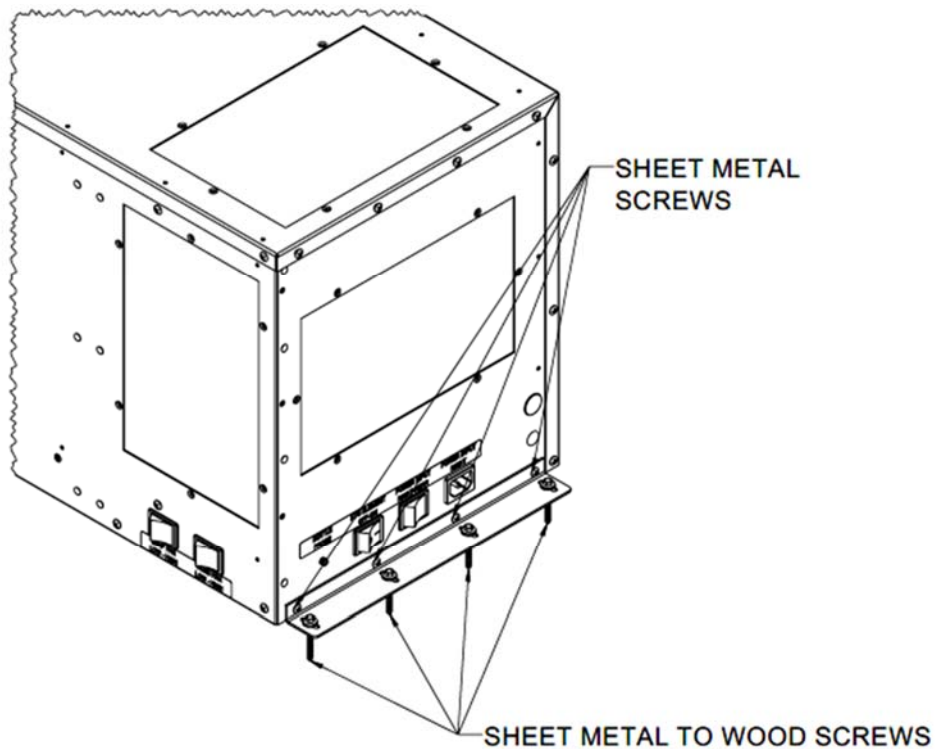


RIGHT SIDE VIEW

3400H THROUGH CEILING MOUNTING

3. Mounting ABOVE the Ceiling:

- Attach the mounting brackets to the unit using the 8 included sheet metal screws along the bottom of each side of the unit. Using the included #8 x 5/8" screws, attach the brackets to the cooling unit using the round holes, so that the wide slot openings are perpendicular to the cooling unit. Once the brackets are attached to the cooling unit, use the eight #9 x 1 1/2 wood screws (included), to attach the brackets to framing in the ceiling.

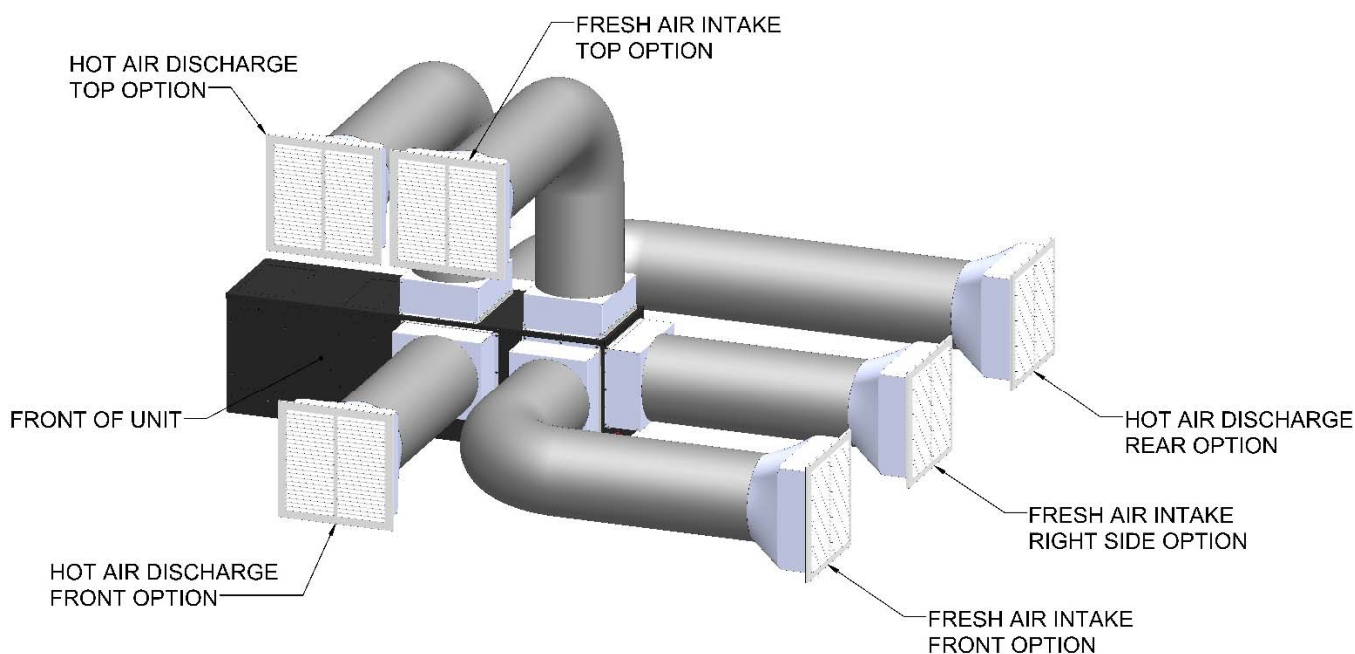


RIGHT SIDE ABOVE CEILING MOUNTING

- In this configuration, 2 sealed openings in the ceiling will need to be created for the cold exhaust and the return air from the cellar.
- The filter will be **attached to the fresh air intake of the cooling unit**, using the magnets on the filter frame.
- Our optional air deflector can be positioned below the opening for the cold exhaust, so that it directs the cold-air discharge to the right, away from the return air opening. An additional deflector can be purchased to direct the hot air exhaust away from the fresh air intake if necessary.

4 . Ducted Installation – Hot Side Ducting

- Ductwork may be attached to the hot air exhaust, the fresh air intake, or both. If ducting is attached only to one adapter, both spaces must be able to provide **140CFM** of independent exhaust and supply ventilation, otherwise the performance and longevity of the cooling unit will be at risk.
- When ducting, the perforated (and solid) vent plates should be removed before attaching the duct hood. (If your configuration is known when the unit is being assembled at the factory, we will remove the plates before shipping the cooling unit.) See instructions for removing and replacing plates below (section #10).
- The unit can be ducted up to 100 equivalent feet (50 equivalent feet per duct) **with 85F maximum intake temperature** (no auxiliary fan required). With the addition of our auxiliary fan, the duct length can be extended up to 200 equivalent feet (100 equivalent feet per duct) and 95F maximum intake temperature.
- These specifications are based on 8" diameter flex ducting that is fully extended to ensure a smooth inner duct wall. All elbows and bends must have a minimum radius of 8 inches. Elbows, bends, grills, and adapters will add to the equivalent length.
- The "High" fan speed setting for the COND FAN must be used when the unit is ducted.



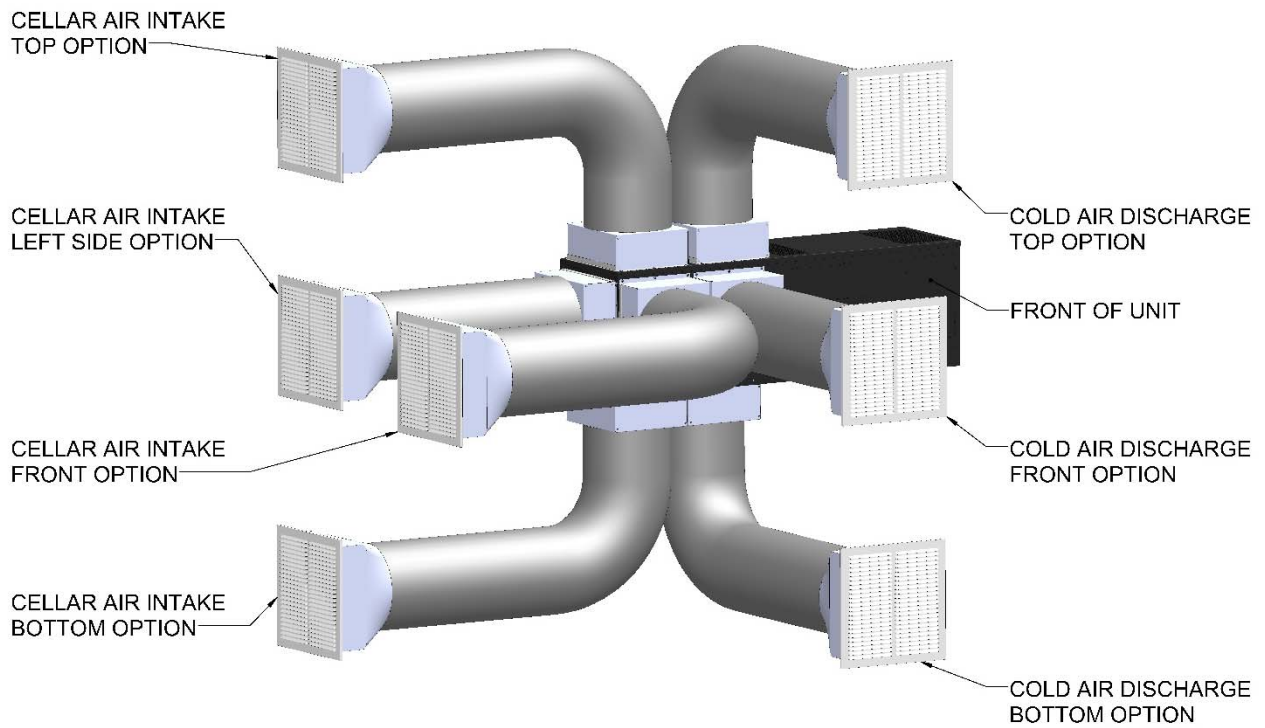
3400H HOT SIDE DUCTING OPTIONS

CHOOSE ONE (1) INTAKE OPTION AND ONE (1) DISCHARGE OPTION



5 . Ducted Installations – Cold Side Ducting

- The unit can be ducted up to 100 equivalent feet (50 equivalent feet per duct). **Cold-side ducting must be attached to BOTH the intake and exhaust openings, with BOTH connecting to the wine cellar.**
- When ducting, the perforated (and solid) vent plates should be removed before attaching the duct hood. (If your configuration is known when the unit is being assembled at the factory, we will remove the plates before shipping the cooling unit.) See instructions for removing and replacing plates below (section #10).
- Duct adapters are designed to attach to the cooling unit with 3/8" self-tapping screws (included). **DO NOT USE SCREWS LONGER THAN 3/8".**
- Seal by applying silicone caulking or foil tape on all seams.
- These specifications are based on 8" diameter flex ducting that is fully extended to ensure a smooth inner duct wall. All elbows and bends must have a minimum radius of 8 inches. Elbows, bends, grills, and adapters will add to the equivalent length.
- **The "High" fan speed settings must be used when the airflow is ducted.**
- Our remote temperature probe (sold separately) must be used with all cold side ducting configurations. The remote temperature probe is designed to plug into the face of the cooling unit and terminate inside the cellar. **The remote temperature probe must be used to measure the liquid temperature of water (90%)+ alcohol (10%) in a bottle that is located in a place with good airflow inside the wine cellar, as follows:**
 - o Place the probe in a bottle with water and rubbing alcohol (the mix between water and alcohol should be 90/10),
 - o Use the probe's rubber stopper to seal the bottle, and
 - o Place the bottle inside the cellar in a location with good airflow.
 - o **After the probe is inserted into liquid, change the HY differential on the cooling unit to "1".** To change the differential on the cooling unit, please refer to our "Advanced Operation" instructions in Section III.

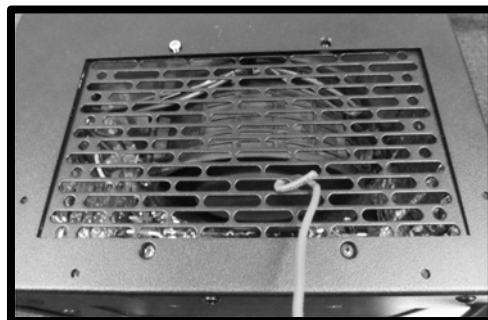


3400H COLD SIDE DUCTING OPTIONS

CHOOSE ONE (1) INTAKE OPTION AND ONE (1) DISCHARGE OPTION
COLD SIDE DUCTING MUST BE INSULATED WITH R-VALUE 6 OR GREATER



- 6 In configurations 2 -5 above, when the cooling unit is partially or completely outside the wine cellar, the left side of the cooling unit may generate condensation on the outside of the case.
 - a. To avoid water damage to the area around the cooling unit, we recommend wrapping the left side of the cooling unit (from the control panel to the left edge of the cooling unit) in 1" foam insulation.
 - If the unit is ducted on the cold side, we recommend insulating the outside of the hoods with 1" foam insulation.
- 7 Once the cooling unit is installed, fill any gaps where the cooling unit or ductwork enter and exit the cellar, to create an insulated and airtight seal between the cellar and the ambient environment.
- 8 The cooling unit comes with an oversized stainless steel drain pan and 200W condensate evaporator, so that a condensate drain line shouldn't be necessary in most applications.
 - a. If your cellar does not have a vapor barrier and/or has air gaps between the cellar and the ambient environment, the unit may create condensate faster than the heating element can evaporate the moisture. If this occurs, you can purchase a drain line to relieve the overflow condensation. When installed properly, the drain line will drop into an open drain or bucket. The 3400H Houdini cooling unit does not require – and should not include - a drain trap in the overflow condensate line.
- 9 The intake and discharge vent and cover plates can be removed and/or relocated, as follows:
 - **IMPORTANT: Before relocating vent plates make sure the unit is unplugged.**
 - When ducting, always remove the vent plate before attached the duct hood.
 - Never operate the unit with an exposed vent (i.e., without a vent plate and without a duct hood).
 - a. Always start by removing the perforated vent plate first, followed by the solid cover plates.
 - b. Always reattach the solid cover plates first, then attach the perforated vent plate.
 - c. When removing and installing the perforated vent plates, use a wire to hold the plate while inserting the screws (as shown below):



Use a wire to hook the perforated vent plate



- **Summary**

Keep in mind the following guidelines before purchasing a wine cooling unit from CellarPro:

- If the sizing of the cooling unit is too small for the cellar, or the sizing of the cooling unit doesn't account for the type of materials (e.g., glass, uninsulated concrete, etc.) used in constructing the cellar, the cooling unit will run non-stop and may be unable to achieve the desired temperature inside the cellar.
- A vapor barrier and an airtight environment is required to limit the amount of infiltration of ambient air into the cellar. Otherwise, the cooling unit potentially will produce buckets of water and/or cause damage to the cellar.
- The hot side of the cooling unit must have access to a space that is at least as large as the wine cellar, and the cooling unit must have access to sufficient supply of fresh air intake, which CANNOT come from the cellar, in order for the cooling unit to be able to do its job.
- Unless modified with a compressor heater down to 20F and a compressor heater/fan cycling switch below 20F, the cooling unit's fresh air intake should not dip below 40F.
- The cooling unit always should be located in temperature conditions above 40F.
- All airflows require a minimum clearance of 8 inches.

Failure to follow the guidelines above, as well as the guidelines throughout this owner's manual, may cause damage to the unit's internal components, and/or limit the expected useful life of the wine cooling unit, and/or cause the product's warranty to become null and void.



IV. Operating Instructions

- **Overview**

Test the cooling unit to make sure it is working properly before installing the cooling unit (refer to the instructions at the beginning of the previous chapter.)

CellarPro cooling units are designed to maintain optimal conditions for wine storage and aging. These conditions include steady, cool temperatures, high humidity, minimal vibration and light, and clean air.

The settings on your CellarPro cooling unit have been preset and optimized by the factory. Before changing any settings below, we recommend waiting 14 days to allow the cooling unit to “break in.”

The cooling unit is designed to cool the cellar gently without stripping moisture out of the cellar environment. Therefore, it is not uncommon for the cooling unit to run nonstop for up to a week initially, depending on the temperature inside the cellar, the size of the cellar, and the temperature of the ambient environment. Once the cellar has reached equilibrium, it is normal for the cooling unit to run as much as 75 percent of the time.

CellarPro cooling units are designed to maintain optimal temperatures for **storing and aging** fine wine. CellarPro cooling units are not designed to maintain temperatures for **serving** wine, which tend to be much colder than storage temperatures, especially serving temperatures for white and sparkling wines.

CellarPro cooling units must be used, stored, moved and/or shipped in the upright position. Be careful when turning the unit on its side. The unit NEVER should be turned upside down.

The cooling system is programmed with a **3-Minute Delay at Startup** to protect its internal components.

10 Temperature Control

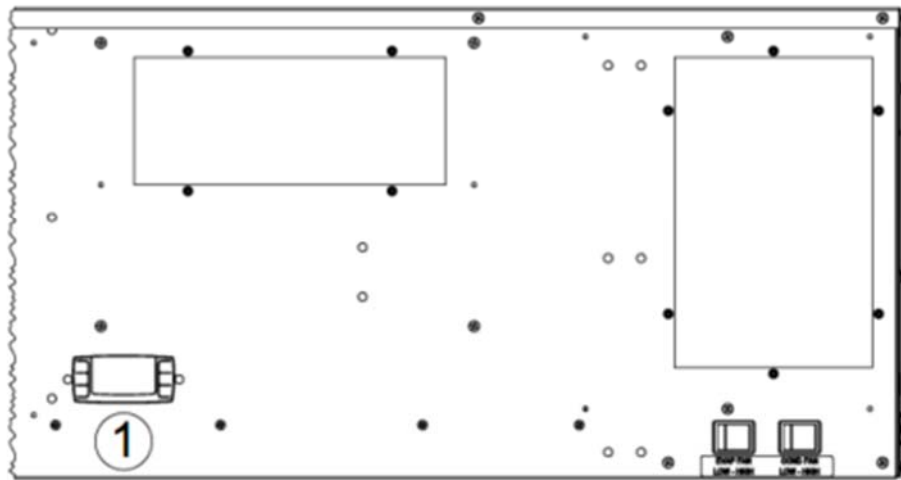
CellarPro cooling units are designed to turn “on” when the air temperature passing over the evaporator coils inside the cellar exceeds the **Minimum Set Point** plus the **Temperature Differential** and turn “off” when the temperature drops below the **Minimum Set Point**. For example, if the Minimum Set Point is 58F and the Temperature Differential is 4F, the cooling unit will turn on when the temperature rises above 62F inside the cellar, and it will turn off when the temperature reaches 58F. In this example, the average temperature inside the cellar will be 60F.

- **Basic Operation**

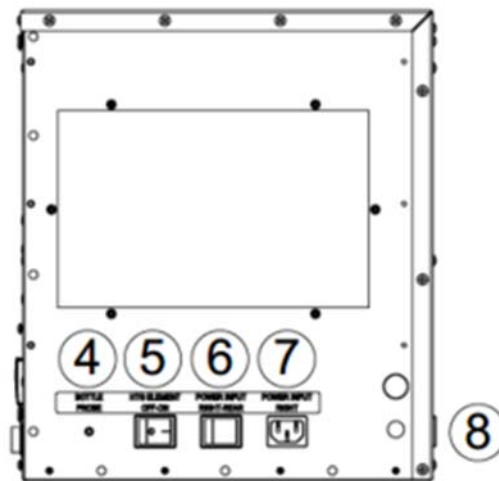
The temperature inside the cellar can be increased or decreased by changing the Minimum Set Point (described later in this chapter). If the cooling unit runs too much, raise the Minimum Set Point to reduce the cycle “on” time. Most wine collectors store their wine in the range of 55 - 60F.

CellarPro cooling units are designed to maintain appropriate levels of humidity (50 to 70 percent) inside wine cellars. To increase or decrease humidity inside the cellar, the **Fon** setting can be changed as described in the “Advanced Operation” section later in this chapter.

- Switch Instructions



FRONT VIEW



RIGHT SIDE VIEW

3400H CONTROL LOCATIONS



(1) Control Panel: Maintains desired cellar environment. Factory settings are optimized for peak performance. Controller is described in detail in the following section.

(2) Evaporator Fan Speed Selector Switch (Low - High): The evaporator (cold side) fan operates on 2 speed settings: Low, and High. For optimum sound and energy efficiency, select the lowest fan speed that will maintain the desired cellar temperature. High speed is recommended for initial cellar pull down and extreme temperature conditions and **is required** for ducted installations.

(3) Condenser Fan Speed Selector Switch (Low - High): The condenser (hot side) fan operates on 2 speed settings: Low, and High. For optimum sound and energy efficiency, select the fan speed based on the maximum fresh air intake temperature. Low fan speed is suitable up to 85F fresh air intake, and high fan speed up to 95F. High speed is recommended for initial cellar pull down and extreme temperature conditions and **is required** for ducted installations.

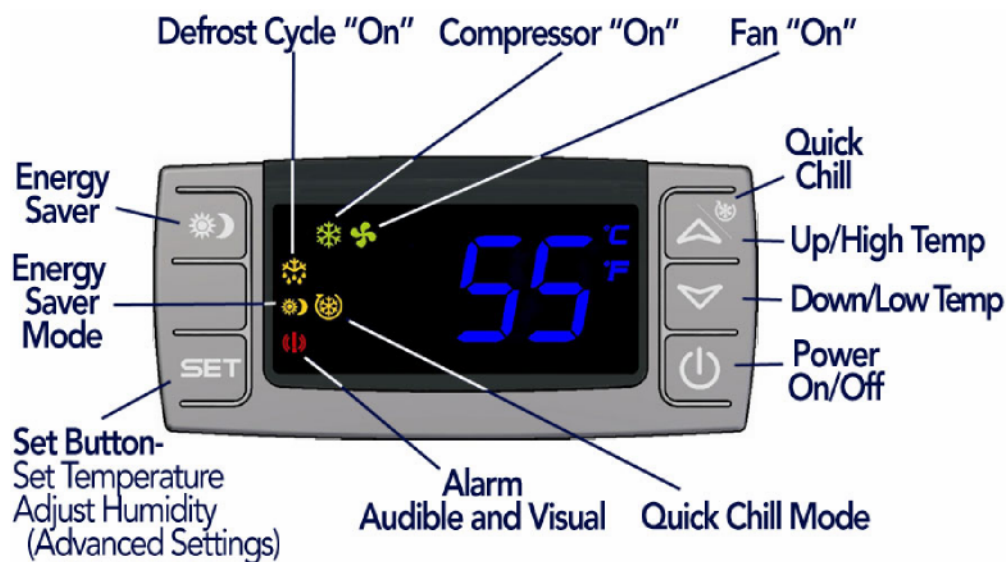
(4) Bottle Probe Jack (Bottle Probe): Plug in the remote bottle probe, and insert the probe into a bottle filled with liquid (we recommend 90% water and 10% rubbing alcohol). The bottle with the probe must be located inside the wine cellar, in the upper third of the cellar and in a location with good airflow, not buried in the back of the wine racks.

(5) Condensate Heater Switch (Off – On): When in the “on” position, the switch will illuminate indicating the condensate evaporator is energized to remove moisture collected in the unit’s condensate drain pan. The switch light may cycle off and on indicating a low moisture environment. If this condition is observed, or if no condensate is present at the overflow, the switch may be turned “off” to reduce unit energy consumption. For initial cellar pull down or in high humidity environments, the switch should be set to “on”.

(6) Power Selector Switch (Right - Rear): The unit is powered by installing the provided plug cord in the right side or rear of the unit. To use the receptacle on the right side, set switch to “Right” and plug in the cord at the right side of the unit (location #7). To use the receptacle on the rear, set to “Rear” and plug in the cord at the rear of the unit (location #8).

(7/8) Grounded Power Receptacle: One receptacle is located on the right (#7), and one on the rear (#8). Use the receptacle that is most convenient for the installation. Enable the receptacle by setting the power location switch (#5) to “Right” or “Rear”.

11 Control Panel Instructions



Digital Display



Notes

The temperature displayed on the control indicates the real-time air temperature as measured by Probe 1 (P1) located inside the unit just before cellar return air reaches the evaporator coils.

Power "On" / "Off"



Press "Power" to turn the unit on and off.

When the "Compressor On" indicator light is on, the Compressor is running.

When the "Fan On" indicator light is on, the Fan is running.

Please note: The cooling system is programmed with a **3-Minute Delay at Startup** to protect internal components.

Up and Down Buttons

To view the **“High Temp”** recorded by the cooling unit, press the “Up” button once.



To view the **“Low Temp”** recorded by the cooling unit, press the “Down” button once.

To **reset** the “High Temp” or “Low Temp”, press the “Set” button for three seconds while “Hi” or “Lo” is displayed. “RST” will blink three times to indicate confirmation.

Set Button



The cooling unit is factory preset with a Minimum Set Point of 58°F and a Temperature Differential of 4°F. This means that the cooling unit will turn on when the display rises above 62°F (58°F + 4°F), and turn off when the display falls below 58°F. In this example, the average temperature inside the cellar will be 60°F.

To view the Minimum Set Point, press the “Set” button for one second.

To change the Minimum Set Point,

- 12 Press the “Set” button for three seconds until °F blinks
- 13 Press “Up” or “Down” button
- 14 Press “Set” button to confirm

The “Set” temperature will blink three times to indicate confirmation

The recommended Minimum Set Point range is 53 - 60°F. To change the Temperature Differential, see “Advanced Operation” later in this chapter.

Energy Saver Button



To activate and deactivate the “Energy Saver” mode, press the “Energy Saver” button.

The “Energy Saver” indicator light will turn on when the cooling unit is in “Energy Saver” mode.

In “Energy Saver” mode, the Minimum Set Point increases 4°F and the Temperature Differential is unchanged.

Quick Chill Button



To activate the “Quick Chill” mode, press the “Up” / “Quick Chill” button for three seconds.

To deactivate “Quick Chill”, press “Quick Chill” button for three seconds again.

The “Quick Chill” indicator light will turn on when the cooling unit is in “Quick Chill” mode.

In the “Quick Chill” mode, the cooling unit will run continuously for 6 hours (or until the intake temperature registers 50°F). This mode is useful after loading “warm” bottles in a cellar

15 Remote Control / Display Instructions



Digital Display The temperature displayed on the control is red instead of blue.

Quick Chill Button To activate the “Quick Chill” mode, press the “Up” button for three seconds
To deactivate “Quick Chill”, press the “Up” button for three seconds again



Button



Icon

The “Quick Chill” indicator (Row 3) light will turn on when the cooling unit is in “Quick Chill” mode,

In the “Quick Chill” mode, the cooling unit will run continuously for 6 hours (or until the unit reaches set point.). This mode is useful after loading “warm” bottles in the cabinet.

Auto Defrost Mode

The cooling unit has a factory default defrost cycle that initiates every 2 hours for 3 minutes. When the cooling unit is in auto-defrost mode, the “Defrost” Indicator light (Top row) will turn on, and the evaporator fan will run.

Manual Defrost

Hold the defrost button in for 3 seconds to initiate a manual defrost. The “Defrost” Indicator light (Top row) will turn on for a 3 minute defrost cycle.



Light



The light button function is disabled, however pressing it will turn on/off the light indicator on the display (2nd row).

Energy Saver

The remote display is not configured with an Energy Saver mode. The set point can be raised manually for periods where energy savings is desired.



16 CellarPro Networkable Thermostat Upgrade

Overview

Cooling units with the Networkable Thermostat (“NT”) Upgrade are configured with a unit-mounted temperature display that provides troubleshooting, operational safety controls and defrost cycles. The upgrade also includes 10 feet of 18/5 thermostat wire, which must be connected to a 24VAC Networkable Thermostat.

Compatible NTs

CellarPro has tested and approved the following NT brands/models:

- 17 Ecobee4 Pro
- 18 Nest
- 19 Honeywell / Lyric T6
- 20 Any other 24VAC HVAC Thermostat with power consumption less than 4VA

Installation Instructions

IMPORTANT: CONNECT THE THERMOSTAT WIRE TO THE NT BEFORE CONNECTING POWER TO THE COOLING UNIT.

Install the cooling unit but DO NOT connect power the cooling unit. The temperature display on the cooling must be blank, indicating no power is connected to the cooling unit. It is now safe to connect the 18/5 thermostat wire to the NT.

If the NT does not have a remote sensor, the NT must be installed inside the cellar. It is very important to locate the Thermostat in an area that gets good airflow, ideally in a location near the air return to the cooling unit.

If the NT has a remote sensor option, it may be possible to locate the main Thermostat outside the cellar, and the remote thermostat inside the cellar. Make sure to disable the temperature input from the main Thermostat and control the cellar using the remote sensor. It is very important to locate the remote sensor in an area that gets good airflow, ideally in a location near the air return to the cooling unit.

Connect the color-coded thermostat lead wire to the NT terminals as follows:

- Red wire to terminal “Rc” (24VAC Power Supply)
- Blue wire to terminal “C” (24VAC Common)
- Yellow wire to terminal “Y1” (cooling / compressor)
- Green wire to terminal “G” (cooling unit fan)
- The White wire in the 18/5 thermostat wire harness is not used.



If the Thermostat does not have the terminal markings listed, it will be necessary to contact the Thermostat manufacturer to advise the correct terminal mapping.

Once the wires are connected to the NT, connect power to the cooling unit, and turn “on” the power on the cooling unit’s digital display. The current temperature will show on the digital display. There is a 3-minute delay before the cooling unit will start to run.

Activate the NT and begin initial set up.

Recommended Settings

The following guidelines are general recommendations to optimize the NT for wine cellar applications. It will be necessary to reference the available NT menus and available options from the documentation provided with the NT.

- Set the mode to “Cool Only”
- Disable all scheduling, learning, and occupancy tracking functions. These routines are intended for comfort cooling and are not suitable for long term wine storage applications.
- If the Thermostat has a configurable minimum/maximum set point range, set the minimum to 47°F and set the maximum set point to 62°F. This is the safe operating range for CellarPro cooling units.
- Enter the desired cellar set point temperature. The NT will control the cooling unit to manage this set point temperature.
- Set fan to “Auto”.
- Compressor Minimum Off Time: If this setting is disabled by default, it must be enabled, with a minimum off time for CellarPro products of 3 minutes.
- If the Thermostat allows high/low temperature alarms, we recommend the following settings: 45°F (Low) and 70°F (high).
- If the Thermostat has an adjustable temperature differential (cooling on/off range), a setting of 4°F is recommended. Many Thermostats have a tight fixed differential of 1-2°F. In this case the cooling unit will cycle more frequently than recommended. Therefore, it is advisable to set a longer Compressor Minimum Off Time to minimize frequent cycling.
- If the NT has a “Change Air Filter” reminder, set the reminder for every 3 months. This is for inspection and cleaning or replacement of the condenser filter.
- Humidity Management (with Ecobee4 Pro Thermostats:) The humidity level in the cellar can be maximized by allowing the cooling fans to run at the end of every cooling cycle



- From the NT, access the “Cool Dissipation Time” parameter from Main Menu>Settings>Installation Settings Advanced Options>Thresholds and change “Cool Dissipation Time” from Auto to a recommended value of 180 seconds (3 minutes). The time can be set from 0 to 900 seconds in 30 second increments.
- Humidity Management with Other Thermostats: our NT Update Kit is pre-programmed with a fixed “fan off delay” of 3 minutes. Therefore, at the end of each cooling cycle, the cooling unit fans will continue to run for 3 minutes.

Temperature Display on Cooling Unit

The temperature display provided on the cooling unit enhances the functionality of the NT for wine cellar applications. Alarms trigger an audible alarm only at the cooling unit, the alarms are not communicated through the NT. Consult the cooling unit Owner’s Manual for detailed troubleshooting information related to these alarms.

- The “Set” button has no effect since the set point is managed by the NT.
- The following parameters and functions are not available with the NT configuration: HY, FON, SET, HES, Quick Chill and Energy Saver.
- For self-contained cooling units, high and low ambient temperature alarms (“HA2”/“LA2”) will behave as follows (refer to the cooling unit’s Owner’s Manual for addition information):
 - o “HA2” alarm - the compressor will shut down until it cools off.
 - o “LA2” alarm - will not shut down the unit and contact CellarPro asap.
- A start up safety delay of 3 minutes is enabled when power is first supplied to the unit, or when recovering from a power failure.
- The defrost cycle will be managed automatically based on the unit configuration. When the cooling unit is in defrost, “DEF” is shown on the display.
- The power button can be used to turn off the unit. When the display reads “OFF”, the compressor and fans are turned off, however the NT still has 24VAC power.
- To completely shut down the system, turn off both the cooling unit and the NT, or disconnect power to the cooling unit.



Advanced Operation

CellarPro cooling systems can be programmed with advanced settings to achieve more control over conditions inside the cellar. Conditions like humidity, the Temperature Differential, and alarm settings all can be modified for custom applications. To access the advanced settings, do the following:

Press the “Set” button and the “Down” button together at the same time and hold for three seconds. Then, use the “Up” or “Down” button to scroll to the following screen:



HUMIDITY: The factory preset for this setting is “3”.

If the humidity inside the cellar is too low, press the “Set” button, then use the “Up” button until the desired setting is reached. The recommended range for this setting is 0-6.



TEMPERATURE DIFFERENTIAL: The factory preset for this setting is “4”.

This setting determines the Temperature Differential and therefore the temperature at which the unit will cycle on. The recommended setting is 4 unless using a bottle probe **in liquid**, in which case the required setting is 1.



HIGH TEMPERATURE ALARM: The factory preset for this setting is “70”.

This setting designates the High temperature inside the cellar at which the alarm is triggered. We recommend leaving this setting at the factory preset.



LOW TEMPERATURE ALARM: The factory preset for this setting is “45”.

This setting designates the Low temperature inside the cellar at which the alarm is triggered. We recommend leaving this setting at the factory preset.



ENERGY SAVINGS MODE DIFFERENTIAL: The factory preset for this setting is “4”.

This setting increases or decreases the Temperature Differential for the Energy Savings Mode. The recommended range for this setting is 2-4.

Standard Protection Mechanisms

The cooling unit is programmed to shut down certain components to protect those components, as well as the wine inside the cellar, under the following circumstances:

Scenario	What it means	What happens
P1 Alarm	Probe 1, which senses the temperature inside the cellar and controls the on/off cycles of the cooling unit, has failed	The cooling unit enters a timed auto-cycle mode until Probe 1 is repaired or replaced. In this mode, the cooling unit will turn on for 12 minutes and off for 8 minutes.



Scenario	What it means	What happens
HA2 Alarm P3 > 140° F	The cooling unit is overheating. If you get an HA2 alarm, 1. Press the "Set" button to turn off the alarm, 2. Check to make sure that the condenser fan (i.e. the fan on the HOT side) is operating. If it is NOT operating, turn "off" the unit immediately. 3. Contact CellarPro for further assistance. Serious damage to the compressor may occur if the compressor continues to run without the fan	The compressor will turn off until the condenser temperature falls below 95F



Maintenance

The filter on the fresh air intake of the cooling unit will collect dust, dirt, and lint over time. It is critically important to clean the reusable filter. If the condenser coils or filter become clogged, the cooling unit will not have proper airflow and its performance and longevity will be compromised.

Only the factory provided filter should be used. Substituting with another filter will cause serious damage to the condenser fan and the compressor.

In non-ducted installations, the filter attaches to the cooling unit with magnets and can be easily removed and cleaned with warm soapy water. In ducted installations, the filter is embedded inside the return air grill, which can be removed easily and cleaned with warm soapy water.

Alarms

The cooling unit has both an audible notification and a visual alarm indicator (shown in “red” on the control panel) that are activated when an alarm is triggered. **Please note:** the temperature alarm (HA) is disabled during the first 23 hours of operation after the cooling unit is turned on:

Alarm Code	What it means	What to do
P1, P3	Probe Failure	- Call CellarPro at 877.726.8496
HA	The temperature inside the cellar is too warm (above 70°F for more than 1 hour)	- Check if the cellar has a leak - Check if door was left open - Lower the ambient temperatures
HA2	The condenser temperature is too high (above 140°)	- Check that the condenser fan (on the right side of the cooling unit) is operating (i.e. confirm that hot air exhaust is being produced) - Make sure that the COND fan is set to “High” - Make sure that the filter on the fresh air return opening is clean - Check for any blockages of the fresh air intake and hot air exhaust. - Then Turn off your cooling unit immediately and call CellarPro at 877.726.8496 or email info@cellarpro.com
LA	The temperature inside the cellar is too cold (below 45°F)	- Raise the ambient temperature - Raise the “Minimum Set Point”
LA2	The temperature at the condenser coils (outside the cabinet) has dropped below the alarm temperature setting	Turn off your cooling unit immediately and call CellarPro at 877.726.8496 or email info@cellarpro.com

V. Troubleshooting

Cooling Unit Runs Constantly

Improper installation, inadequate insulation, or a cellar that is too large will cause the cooling unit to run continuously and cannot be troubleshooted.

The cooling unit is designed to turn on when the air temperature in the cellar rises ABOVE the Minimum Set Point + Temperature Differential and turn off when the air temperature falls below the Minimum Set Point. For example, if the Minimum Set Point is 58°F and the Temperature Differential is 4°F, the cooling unit will turn on above 62°F and turn off below 58° F. In this example, the average temperature inside the cellar will be 60°F.

When bottles are first loaded in the cellar, the cooling unit will run continuously (even up to a week) until the temperature inside the cellar falls below the Set Point.

Hot weather conditions, insufficient ventilation and/or dirty condenser filters may cause the cooling unit to run continuously. To reduce cycle times,

1. Remove any obstructions to air flow to or from the unit
2. Check to make sure the condenser filter is clean
3. Increase the Fan speed to High
4. Increase the supply of cool air to the space outside the condenser coils, using a fan, ducting or an exhaust system to remove heat from the space.
5. Raise the Minimum Set Point on the cooling unit

Cooling Unit Is Dripping

The cooling unit is designed to remove excess moisture from inside the cellar, which collects in the drip pan of the cooling unit and is evaporated by the condensate heater. Excess moisture can occur when the cooling unit runs constantly, when the Minimum Set Point is too low and/or when the cellar doesn't have a good seal from the outside environment. To eliminate overflow, do the following:

1. If the cold side of the unit is ducted, make sure the ducting is tight against the cooling unit and well-sealed.
2. If an optional condensate drain line came with the cooling unit, make sure the drain line is free of obstructions and terminates in an open drain. 3400H cooling unit condensate lines do not need – and should not have - a drain trap.
3. Raise the Minimum Set Point of the cooling unit.
4. Check to make sure the cellar has airtight seals, including the door(s), light fixtures, and all walls, ceiling, and floor.



HA2 Alarm Has Been Triggered

The cooling unit is designed to measure the temperature of the condenser coils and, if the temperature exceeds 140°F, the HA2 alarm will display on the control panel.

If this alarm happens **when you first receive and start operating your CellarPro cooling unit**, check for appropriate installation and ventilation on the Hot Side of the cooling unit (Chapter II). Also, make sure that there aren't any obstructions to the intake and/or exhaust vents.

If the cooling unit has been operating for several months without any problems and the alarm occurs, **turn the unit off immediately**, check the filter to make sure it's clean, check the condenser fan to make sure it's working, and then call CellarPro at 877.726.8496 or email info@cellarpro.com before turning on the unit.

LA2 Alarm has been triggered

As noted above, the cooling unit is designed to measure the temperature of the condenser coils and, if the temperature drops below a certain point, the LA2 alarm will display on the control panel. Please call CellarPro at 877.726.8496 if this alarm occurs.

Cooling Unit Won't Turn On

The cooling system is programmed with a **3-Minute Delay at Startup** to protect its internal components.

If the unit is configured with a remote display, the wiring must be connected in order for the unit to run.



VI. Limited Warranty

For five years from the date of original delivery, your CellarPro warranty covers the internal compressor if it proves to be defective in materials or workmanship. In addition, for two years from the date of original delivery, your CellarPro warranty covers all parts and labor to repair or replace any components in the wine cooling unit that prove to be defective in materials or workmanship.

Under the terms of this warranty, CellarPro will repair or replace the original cooling unit with a new or refurbished cooling unit and, once replaced, the original cooling unit must be returned to CellarPro.

All service provided by CellarPro under the above warranty must be performed by a designated repair center, unless otherwise specified by CellarPro. Purchaser is responsible for shipping the cooling unit to and from CellarPro or to and from a designated repair facility, and for removing and reinstalling the cooling unit from the wine cellar.

The limited warranty applies only to cooling units purchased from the factory or an authorized dealer. Damage caused by others or by any cause beyond the control of CellarPro, shall not be considered defects in material or workmanship and are not covered by the warranty. The limited warranty does not cover any parts or labor to correct any defect caused by negligence, commercial use, accident, or improper use, maintenance, installation, service, or repair.

THE REMEDIES DESCRIBED ABOVE FOR EACH WARRANTY ARE THE ONLY ONES, WHICH CELLARPRO WILL PROVIDE, EITHER UNDER THESE WARRANTIES OR UNDER ANY WARRANTY ARISING BY OPERATION OF LAW. CELLARPRO WILL NOT BE RESPONSIBLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING FROM THE BREACH OF THESE WARRANTIES OR ANY OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other legal rights, which vary from state to state.

To receive parts and/or service and the name of a CellarPro designated repair facility nearest you, contact your CellarPro dealer. You may also contact CellarPro directly by calling us at 1.877.726.8496.