BrewBuilt

ICEMASTER MAX 4

Thank you for purchasing the IceMaster refrigeration unit. You are taking a big step to better manage fermentation temperatures, and ultimately making cleaner, more consistent beverages.

This IceMaster is designed to manage your fermentations by cooling water/glycol to a set temperature in a reservoir which will then be circulated via a submersible pump through your specific cooling coils/jacket/plate/system.

WARNINGS

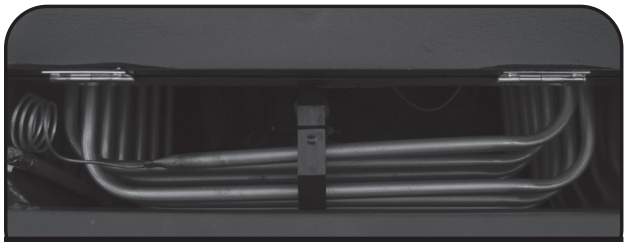
1. Freezing can occur so icing in the reservoir is considered normal operation. To compensate for this we recommend that one uses a 20% propylene glycol solution to lower the freezing point.

2. Do not set the reservoir temperature controller lower than -2.2ºC. Running the unit below this temperature may negatively affect the unit's efficiency and has the potential to freeze beer which may impact the finished beer's flavor.

Assembly And Testing Instructions

1. Unpack your unit and open the top cover to find the sight glass and power cord. Place the power cord aside for now.
2. Attach the sight glass to the front of the unit by pushing the Duotight tee pieces onto the push fit tubes. Pull back slightly on the tee pieces to confirm they are securely locked in place.
3. Plug in the temperature probes to both pump controllers and attach 3/8" tubing to form a return loop on both sets of inlets and outlets.
4. Open the top cover and fill the reservoir with 4.5 gallons of tap water.
5. Plug in the power cord and flip the red switch to power on the unit.
6. Set the temperature for each pump controller at the front of the unit to 36°F.
   - To turn the pump controller On/Off, hold the 'Down' button for 3 seconds.
   - Hold the 'Up' button for 3 seconds until the number is flashing. The flashing number is your set temperature.
   - While the number is flashing, press the 'Down' button to decrease the set temperature or press the 'Up' button to increase the set temperature.
   - Once you have adjusted the set temperature, wait for the number to stop flashing and the pump controller will return to normal operation mode and display the temperature probe reading.
7. 7. The pumps should now kick on and begin recirculating water through the return loops. Look for water flow and confirm each pump is operating correctly and check for leaks around your connections.
8. At the back of the unit, adjust the reservoir controller to 2°C.
   - Hold the 'S' button until F1 is displayed.
   - Press 'S' again, which will enter the temperature adjustment mode.
   - Then hold 'S' and the up or down button simultaneously to alter the set temperature of the reservoir.
9. Once you have confirmed that the reservoir is cooling, the pumps are operating, and you have no leaks, you are finished with the initial assembly and testing and can move onto to setting up the unit with your cooling system.

TIP - if you plan to use a propylene glycol solution with the Icemaster, remove the bottom tee of the sight glass to drain the water used for testing. If you will be using water only, be sure to keep the reservoir temperature set at or above 2°C to avoid freezing.



Icemaster Reservoir

Quick Setup

1. Fill the reservoir with a 20% propylene glycol solution: 4 parts RO/distilled/deionized water to 1 part 99.9% propylene glycol.
   - If you choose to use water only, it is best to use tap water. RO/distilled/deionized water on its own may damage the heat exchanger.
2. Connect your cooling system outlet hose to the IN bulkhead.
3. Connect your cooling system inlet hose to the OUT bulkhead directly to the right.
4. Plug in the temperature probe to the outlet by the pump controller. Install the temperature probe in your thermowell, or tape it directly to the outside of your vessel if it does not have a thermowell.
5. Hold the 'Down' button for 3 seconds to turn the temperature controller On.
6. During normal operation, the number displayed on the pump controller is the reading from the temperature probe.
7. Adjust the SET temperature on the controller to your desired fermentation temperature.
   - To adjust the SET temperature, hold the 'Up' button for 3 seconds until the number is flashing. While the number is flashing, press the 'Down' button to decrease the set temperature or press the 'Up' button to increase the set temperature. Wait 3 seconds and the controller will save the setting and return to normal operation mode.
8. To adjust the reservoir temperature settings, please see the instructions on the following page.

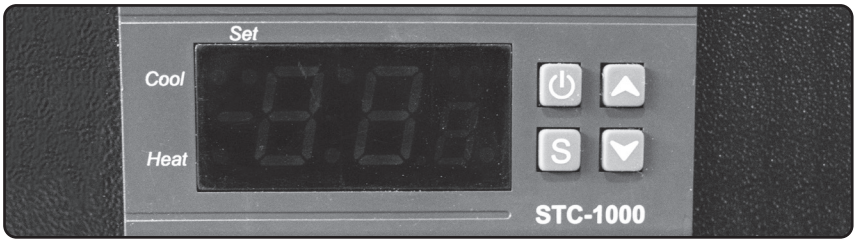
Adjusting The Pump Differential

1. The temperature differential controls at what point the pump will power on to begin a cooling cycle. For example, if your SET temperature is 68°F and the temperature probe reading rises to 68.9°F, the pump will power on and recirculate cooling solution until the probe reading drops back down to 20°C.
2. The default differential setting is 0.9°C, but it can be adjusted if desired.
3. To adjust this parameter, hold the 'Up' and 'Down' buttons simultaneously for 3 seconds. The first menu code F0 will appear on the display.
4. Press the 'Up' or 'Down' buttons to cycle through the parameters until you reach F3 for the differential setting.
5. Press the 'Up' and 'Down' buttons simultaneously to make adjustments to the parameter. Then press either the 'Up' or 'Down' buttons change the set value of the selected parameter.
6. Wait 5 seconds and the controller will save your parameter setting and return to normal operation mode.

Parameter	Function	Range	Default	Units
F0	SetPoint range	-40-90°C/ -40-194°F	59	°C/°F
F1	Minimum value for SetPoint	-40°C/ -40°F	-40	°C/°F
F2	Maximum value for SetPoint	90°C/194°F	90/194	°C/°F
F3	Cooling differential	0.1-10.0°C/0.2-18.0°F	0.9	°C/°F
F4	Heating differential	0.1-10.0°C/0.2-18.0°F	0.9	°C/°F
F5	Temperature probe calibration	-10-10.0°C/-18-18.0°F	0	°C/°F
F6	Cooling start delay	1–10	1	Minute
F7	Cooling start delay after power failure	0–300	10	Second
F8	Heating start delay	1–10	1	Minute
F9	Heating start delay after power failure	0–300	10	Second
F10	Maximum temperature before alarm activation	F11 - 99.9°C/F11 - 212°F	99/212	°C/°F
F11	Minimum temperature before alarm activation	-50.0°C - F10/-58°F - F10	-40	°C/°F
F12	Alarm delay	1–20	1	Minute
F13	Temperature Unit	0=Celsius /1=Fahrenheit	1	°C/°F

Icemaster Temperature Controller Settings

The ice bath temperature controller (found on the opposite side of the pump controllers, just below the upper vents) has several functions to help maintain ideal conditions to control your fermentations.



THE CONTROLLER UNIT ITSELF IS FAIRLY STRAIGHTFORWARD, BUT IT'S STILL A GOOD IDEA TO GET FAMILIAR WITH THE BUTTONS/FUNCTIONS.

CONTROLLER BASICS

- To turn on/off - hold the **POWER** button down for few seconds.
- The readout on the controller will show the temperature (Celsius) of the liquid inside the IceMaster.
- To check the temperature setting - press & hold the **UP** arrow.
- To check the differential (+/- range from the set temp) - press & hold the **DOWN** arrow.

FUNCTION CHANGES

TO MAKE CHANGES TO ANY OF THE FUNCTIONS

1. Hold down the **S** button until **F1** shows on the controller, release the button.
2. Select the desired function by clicking the **UP** or **DOWN** arrows until the controller shows the correct function number.
3. Press & hold the **S** button while using the **UP/DOWN** arrows to adjust to your desired setting.
4. Release the **S** button.
5. And finally, press the **POWER** button to lock in the setting.

FUNCTION SETTINGS

F1 THE DESIRED TEMPERATURE SETTING

F2 TEMPERATURE DIFFERENTIAL
IceMaster will cycle on/off to keep its temperature within the set range of the set temperature – example: if you set the temperature at 5°C and the differential to 1°C, the unit will cycle on at 6°C and chill the reservoir till the temperature cools back down to 5°C.

F3 COMPRESSOR DELAY TIME IN MINUTES
This feature protects the unit from turning on/off too quickly, and potentially damaging the compressor. The range is from 1-10 minutes with the default set at 3.

F4 CALIBRATES THE ICEMASTER AGAINST AN ACCURATE THERMOMETER
Generally, the unit does not need any additional calibration. However, to find the correct adjustment – place an accurate thermometer in the unit and compare against the controller readout. If needed, set the calibration on the controller +/- by the number of degrees it is off. This will ensure the unit is adjusting to your desired temperature properly.

MAINTENANCE/ CLEANING

To ensure the unit continues to properly function it is good practice to dust/clean the heat exchangers every 6 months.

TROUBLESHOOTING

IceMaster does not turn on	Check circuit breaker or fuse ; Check plugs.
IceMaster does not seem cold enough	Check temperature setting by placing a thermometer inside reservoir. Check after 30 minutes & compare against set unit temperature. Calibrate with F4 function on controller as needed.
IceMaster shuts off/on too often	Check set temperature range. Adjust F2 function on controller to a higher range.
IceMaster is always on	Ambient room temperature is too high, so unit is working harder to cool to set temperature.
IceMaster seems to make too much noise	Humming is normal and gurgling sounds are caused by cooling liquid used by the unit. The unit may not be not level.

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