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Stainlessium

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Thank you for your purchase of Ss Brewtech's Fermentation Temperature Stabilization System aka "FTSs". We appreciate your business and your passion for making great beer!

The instructions Included will guide you through the setup and operation of your system.

System Overview

The basic principle of the system is to pump chilled water through the immersion coil when the temperature of your wort is greater than the controller set-point. The system is designed to use chilled ice water from a common cooler. In this configuration, the submersible pump will be placed in the bottom of the cooler.

The FTSs is intended to be a low pressure closed loop system. Water pumped from the cooler is returned to the cooler to be used again. Under normal operation, you do not need to have hose-clamps on the water transport tubing. However, if you have any concerns of pressure buildup due to your unique setup, you should install hose-clamps at all connections.

If your setup requires more distance from the Fermenter to the Cooler, you can purchase common vinyl tubing at most hardware stores. The pump is capable lifting the water up to 10 feet. Pumping beyond 10 feet will negatively affect efficiency.

Notes on Efficiency

Efficiency of your system depends on may variables. Ideally, you would have the fermenter in an area where the temperatures are relatively moderate. This will extend the life of your chill water ice. Speaking of chiller water ice, ONLY use block ice or frozen liquid filled plastic jugs or containers. Cube is is very inefficient. You should avoid using your FTSs to bring the Wort from a high temp to pitching temperatures. Besides leaving all of the cold break in your fermenter, it will consume much of your cooling capacity and require you to replenish the ice early in the process.

First Time Cleaning

Before you use your system, you will need to clean all manufacturing residues with either TSP (highly recommended and you can find at any hardware store) or warm soapy water followed by a good hot water rinse. Please see the FAQ's on our website (www.ssbrewtech.com) regarding proper care and cleaning of stainless steel.

Sanitation

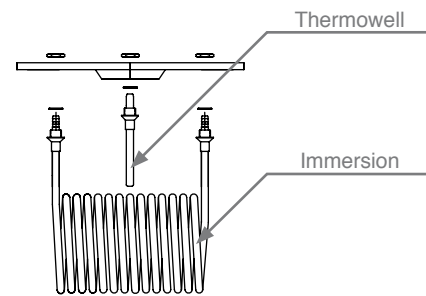Sanitize the Immersion Chiller, Thermal Well, Lid and gasket as you would normally.

Post-use Cleanup

After you have fermented your beer to the desired finishing gravity, soak the FTSs stainless components in PBW or other caustic cleaner as directed by the manufacturer. NEVER use chlorinated products on Stainless Steel! Damage will result.
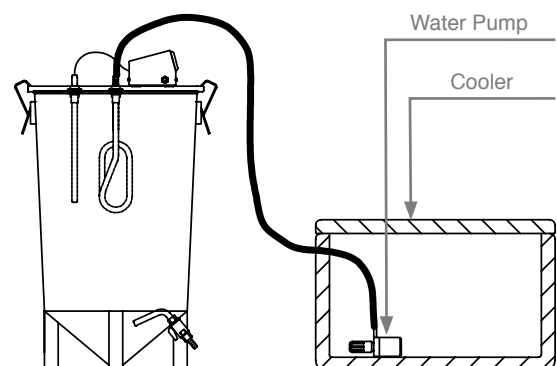
ASSEMBLY INSTRUCTIONS

Before You Brew - System Assembly

· Think about where you want to locate your Brew Bucket or Chronical series fermenter, where you will place the Controller, and where you will place your chill water source (whether that is an ice chest, a chilled corny keg in a cooler, a glycol system, etc.)

· Start by placing the Neoprene Insulating Jacket over the fermenter.

· Next, install the Immersion Chiller Coil and Thermowell into the lid as shown (note, there are extra o-rings supplied, you only need to use one o-ring on the wort side of the lid)

Thermowell

Immersion

· Divide the length of vinyl tubing into two equal lengths. Connect one end of one tube to the immersion pump outlet. This will be the small pipe connection on the pump. Connect the other end to the Immersion Chiller and then back into the cooler.

· Place the Silicone Pump Intake Cover over the intake port of the Immersion Pump.

· If your cooler is dedicated to the FTSs system, drill holes for the chill water tubes and place the tubes through the holes with the pump located inside the cooler.

· Place the Digital Controller's temperature sensor into the Thermowell. Be sure the sensor goes all of the way into the bottom of the Thermowell.

· Plug in the Pump power cable and System Power Supply as marked on the Digital Controller.

Water Pump

Cooler

OPERATING INSTRUCTIONS

After You Brew – Installing the FTSs System

• Sanitize your Brew Bucket or Chronical fermenter as usual.

• Fill your Brew Bucket or Chronical with cooled wort as normal.

• Place the sanitized FTSs lid onto your Brew Bucket or Chronical fermenter.

• Install a sanitized airlock (bubbler) or blow-off tube as usual.

• Connect the Chill Water tubes to Chiller Coil and secure with zip ties or hose clamps.

• Insert the Temperature Sensor into the Thermowell.

• Be sure the probe is fully inserted to the bottom of the Thermowell. (The excess wire on the temp sensor can be "pushed" into the body of the controller if desired)

• Plug the Pump Connector into the side labeled "PUMP"

• Plug the Power Supply Connector into the side labeled "12VDC"

• Place at least 10 lbs of ice with about 2 gallons of cold water in your cooler.

• We recommend using three of the 1/2 gallon size frozen jugs of water or Block Ice, as these will last much longer than cube ice!

• The Chill Water needs to fully cover the pump by at least 2" of depth - add more water as needed. Generally, you should have about 50% of your fermentation volume in chill water (for a 5 gal batch of beer, use about 2-1/2 gal of chill water)

• Plug the power supply into a wall outlet (110V – 240V)

Fermenting - Setting the FTSs to Operate

• Toggle the main power switch ON. The digits of the display will illuminate.

• Momentarily press (less than a second) the "SET" button (more than 3 seconds puts the controller into the advanced settings)

• While the SET Light is illuminated, press the Up/Down buttons to select the desired temperature setting.

• Once you have the desired temperature selected, momentarily press the "SET" button

again. This will then set the controller to attain the desired temperature.

• When the system calls for cooling, it will illuminate the "work" light and the pump will start to cycle chill water through the Immersion Chiller.

• Set back, have a beer and enjoy the magic of thermodynamics at work!

• Depending on the ambient temperature, it's a good idea to check on your chill water source and ice once or twice a day.

ADVANCED CONTROLLER SETTINGS

There are a number of advanced settings that can be changed on the controller. In general, you will not need to make any changes. But here they are, if you want to see what is possible. These settings are accessed by HOLDING the "SET" button for more than 3 seconds.

Selecting between Celsius or Fahrenheit
Press "**SET**" and "▲" keys and hold them for more than 3 seconds to enter the menu display, the screen appears "F/C" code, press the "**SET**" key to display the working mode, press the "▲" or "▼" to adjust the display, **C** means Celsius mode; **F** means Fahrenheit mode. Press RST to save the settng and exit.
Factory Default = F

Cooling, heating mode setting
Press "**SET**" key and hold more than 3 seconds to enter the menu display, the screen appears "**HC**" code, press the "**SET**" key to display the working mode, press the "▲" or "▼" to adjust the display, C means cooling mode; H means heating mode.
Factory Default = C

Hysteresis settings
Press "**SET**" key and hold more than 3 seconds to enter the menu display, with "▲" or "▼" key adjusted to the screen, appearing "D" code, press the "**SET**" key to display the hysteresis set value, press "▲"or "▼" key to adjust the parameters.
Factory Default = 0

Temperature calibration settings
Press "**SET**" key and hold more than 3 seconds to enter the menu display, with "▲" or "▼" key adjusted to the screen, appearing "**CA**" code, press the "**SET**" key to display the temperature calibration settings, press "▲" or "▼" key to adjust the parameters.
Factory Default = 0

Delay protection setting

Press "**SET**" key and hold more than 3 seconds to enter the menu display,with "▲" or "▼" key adjusted to the screen, appearing "PT" code, press the "**SET**" key to display the delay setting value, then press the "▲"or "▼"key to adjust the parameters.
Factory Default = 0 min

Upper and lower limit settings

Press "**SET**" key and hold more than 3 seconds to enter the menu display, with "▲" or "▼" key adjusted to the screen, appearing "HS" or "LS" code, press the "**SET**" key to display the upper or lower limit set value, Then press "▲" or "▼" key to adjust the parameters. HS means upper limit. LS means lower limit.
Factory Default = -44, +299

CLEANING INSTRUCTIONS

After fermentation has finished, clean and drain the system

- Remove the FTSs Immersion Coil from the finished beer

- Remove the tubes from the Immersion Coil and pump

- Remove the Immersion Chiller and Thermowell from the FTSs Lid

- Fully drain the remaining chill water from the system

- Soak the Stainless parts in PBW or similar caustic to remove proteins that have adhered to the surfaces

- Follow the Cleaning Instructions - products like PBW depend on concentration, temperature and duration to do a proper job of cleaning

- Drain and allow every component of the system to air dry

FAQs

Q – Can I control more than one fermenter with a single FTSs control unit?
A – You can, but it's better to use individual controllers, one for each fermenter because fermentation will progress at different rates.

Q – Can I use a single source of Chill water for multiple fermenters?
A – Yes, but keep in mind the thermal load will be doubled with 2 fermenters, so you will need twice the cooling capability in your chill water.

Q – Can I increase the efficiency of the FTSs system?
A – Yes, there are several things to consider:
Most important, your initial wort temp should be at or slightly below the set point temperature. Otherwise your chill water will be consumed to cool the wort before fermentation starts. Use Block Ice or Frozen water jugs as opposed to Ice Cubes. Ferment in an area with as moderate of ambient temperature as possible
Use a cooler with thick walls and a good insulation value. Insulate the hoses going to the Immersion Chiller.

Q – Can I use the FTSs to cool the wort to pitching temperatures?
A – Yes, but after you get to pitching temperatures, you should replenish your ice supply

Q – Can I set multiple temperatures during fermentation, say 72F for the lag phase and 68F for primary?
A – Yes, however you will need to watch the progress of your fermentation closely so you don't stay too long at a higher temperature than you planned

Q – How often do I need to replenish my Ice?
A – That depends an many variables, so there's no exact answer. However, you should check your ice daily until you get a feel for the ice consumption on your particular fermentation setup.

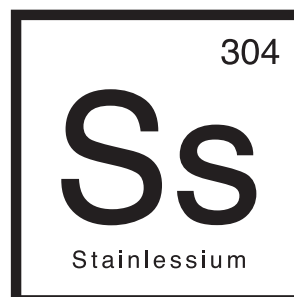**Q** – Can I run Glycol in the FTSs?
A – Yes, the submersion pump will operate fine in Glycol, but this assumes you have a method to cool the Glycol.

Q – My FTSs seems to over-shoot the set point, is there a problem?
A – No, the FTSs will stop running when the set point is reached, however the immersion coil is colder that the surrounding wort

Q – Can I use my Refrigerator for Chill water?
A – Yes, as along as the Chill Water temperature is at least 15F below the set point, it will work fine. Although it will cycle more often and for longer periods. Ideally, the Chill Water volume should be equal to your fermenting volume.

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