



Using the Brautag Premium Brewing System, HERMS

The Brautag HERMS (Heat Exchange Re-Circulating Mash System) utilized three 20-gallon kettles and is designed to brew up 15 gallons of beer (although many brew batches up to 17 gallons). This system was designed to be easy and fun to use. All of us at Brautag are brewers and we have brewed on every system imaginable. We have also brewed on a variety of HERMS systems and have found this system to be the most rewarding in both quality of beer brewed and the simplicity of use. We have not always found the controllers and components on other systems to be the easiest to use and that is why we developed the Brautag system. We spent several years designing and perfecting our system and we had three main goals in mind.

1. Build a system that is intuitive, easy and fun to use.
2. Build a system that helps the brewer create exceptional quality beers
3. Create a system that is easy to maintain and gives many years of service.

We have met these goals with the Brautag and we believe you will find it a joy to brew on.

Getting ready to brew:

If you have never brewed all grain, check out our [New to Brewing Guide](#) on www.homebrewhappyhour.com This guide can be found at the top of the “Articles” section. This is an excellent overview of how to brew All Grain (as well as extract). You will be using the “Fly/Continuous Sparging” technique with the Brautag. Here are some other tips to get ready for your brewing day using the Brautag system.

- You can use RO or water treated to your specifications in both the HLT (Hot Liquor Tank) and the Mash Tun. The HLT is the kettle on the left with the coil and the Mash Tun is the kettle in the middle.
- Determine the amount of water you will need for both your Strike and your Sparge and put the appropriate amount in each kettle. The Strike water is the water you start off with in your Mash Tun and your Sparge water is the water in your HLT that you will eventually use for the sparge.
- The Strike water is normally 1.25 to 2 quarts of water per pound of grain. 1 ½ quarts is a great place to start. For example, if your recipe uses 30 pounds of grain than you would need 45 quarts of water to start with in your Mash Tun.
- The sparge water is not as critical to calculate. You want to at least put water over the coil in the HLT, but it will not hurt to put significantly more in to make sure you have plenty of water for your sparge.
- Get your recipe together, including milling your grain. Make sure you have your grains, hops, yeast and other ingredients ([Whirlfloc](#) tablets, etc.) organized for brewing.
- Have your “cooling” system ready to go, so you can cool your wort immediately after the boil. If you need ice to reach pitching temperature, make sure you have enough on hand.
- Hook up all your sensors to the kettles and the control box. The locations are marked on the control box. The “Mash In” goes on top sensor on kettle and the “Mash Out” goes on bottom sensor.
- Review your recipe and make sure you are ready to brew.
- Pour homebrew in glass, take a sip, relax.



Getting to know your Brautag Controller.

The controller is the brains of your brewing system. What is different about our controller is the simplicity of the system. It might look a little overwhelming at first, but just evolves around three steps with a controller dedicated to each one.

All four rows on your controller contain three parts, here is the breakdown going from left to right:

1. Row one has your on/off switch, a simple timer, and an alarm with audible and visual alerts.
2. The second row has a controller dedicated to each kettle. The Hot Liquor Tank, the Mash Tun and the Boil Kettle. We will go into more details on these below
3. The third row controls your HLT and Boil elements with the switch in the middle and the indicator lights on each side.
4. Finally, the fourth row controls your two pumps, one for water and the other for wort, it also has your alarm on and off in the center.

Below all of this are the labels showing which cable goes to which sensor. Now we will go into more detail.

Hot Liquor Tank (HLT), Kettle and controller

The Hot liquor tank and its controller have two functions.

The first is to heat the water consistently in the Mash Tun. This is the reason for the coil, water from Mash Tun is circulated in the HLT to heat the Mash Tun and keep the temperature consistent once your desired temperature is reached. This allows for very precise temperatures in your brewing process.

The second function of the HLT is to provide hot water for your sparge. The sparge is done using water at around 168° to 170°F (76 to 77°C). You pull water directly from the HLT for the sparge and no longer utilize the coil during this second step.

Using the controller is extremely simple. You simply turn the dial and then put in on the dial once to lock in your desired temperature. The controller will read the sensor and keep the temperature consistent once it has been reached.

Mash Tun and Controller

The Mash Tun controller does not do anything except monitor your Mash Tun Temperatures, going in and out of the kettle. The "IN" will normally always be hotter than the "out" this is normal. The "average" temperature of the Mash will be somewhere in the middle. We recommend using a high quality [Lab Thermometer](#) in addition. This will allow you take a reading in the center, middle of the wort for a confirmation of the average temperature.

Before adding your grain, the Mash Tun confirm that your false bottom has been placed in the bottom of kettle and your strike* temperature is about 6 degrees hotter than your desired mash temperature. Keep in mind that this is not an exact science and if your mash temperature comes in higher or lower than expected it will reach the

desired temperature soon enough. Once you have used your system a few times you will get a better idea of how much hotter your strike temperature needs to be than your mash temperature. This largely depends on the temperature of the grains you are adding and can change with the seasons.

**Strike temp vs Mash Temp, what is that? – Strike temp just refers to the higher temperature you bring your mash water to before adding grains. The grains are colder than the water, so the mash temp will immediately drop when you add grains. Your goal is for it to drop the temperature of your desired mash temperature of 152°F (67°C) or the mash temperature recommended in your recipe.*

Set up hoses as follows. As the saying goes, a photo is worth a thousand words, so we have color coded the hoses below to show their path. There are also written directions below the photo.



- On HLT put hose on top valve (there are four) and run this hose to the outlet (top) valve on bottom left pump. (Red coded hose)
- On HLT put hose on 2nd valve from top and run this hose to the inlet (top) of the Mash Tun. (Purple coded hose)
- On HLT put hose on third valve from top and run this hose to the outlet of the wort pump. (Green coded hose)
- On HLT put hose on bottom center valve and run this hose to the Inlet on bottom left pump. (yellow coded hose)
- On Mash Tun put hose on bottom valve and run to inlet valve (side) on right bottom pump. (Orange coded hose)

Now that hoses are set up you are ready to start your mash....almost.

Settings on controller for Mash:

- You will need to turn controller ON to start operation. Use the key on the top left of controller.
- You will now want to make sure all valves connected to hoses are open and turn on both pumps. After a moment you will see water pumping into both kettles.
- Wait for the mash water to heat up to strike temp in the HLT/Mash Tun and then pour your grain into the Mash Tun while stirring to prevent clumps. (Make sure you put in your false bottom first!) Now set your timer (see below) for one hour and you are mashing!

Setting the timer:



Timer is very simple to use. Top display (PV) is actual timer and bottom display (SV) just tells you how many minutes timer is set for. To set timer press "set" once and then use up and down arrows to set the time amount you desire. Then press set again and put in the same number.

To start timer push "Restart" if you turn on alarm on bottom, center of the controller it will sound when time is completed.

Once the one hour of mashing is done you are ready to start your sparge. Sparging rinses the grains of available sugars and gives you additional sugars. In brewing we call the amount of sugars you collect your "efficiency" (if you collect 80% of the sugars available in the grain than your efficiency rating is 80%) If you are using a recipe and you need to plug in the efficiency percentage, you will generally reach an efficiency of around 70% to 80%, but this will vary. Don't worry about this too much, you will take readings to know your sugar content and you can make adjustments in the boil.

Setting up hoses to Sparge:

When moving your hoses for sparging please keep in mind that they have hot wort or water in them, be careful and wear protective gloves. See written instructions under photo.



To set up your hoses for sparging please note that you are using one less hose, so you can set the longest hose to the side. Make sure valves are closed

- Put hose on bottom, center valve of the HLT and connect this to the inlet on left pump (orange).
- Put hose on outlet of left pump and put on top valve of Mash Tun. (red).
- Put hose on bottom valve of Mash Tun and connect to inlet on right pump (green)
- Put hose on outlet of right pump and bottom valve of Boil Kettle. (blue)

Next you want to change out the inside top fitting on the Mash Tun from the elbow used in mashing to the sparge are used in sparging. This is a quick and easy process as you can see in the photo below:



Now you are ready to sparge.

Keep in mind when you sparge that you want the process to take about 45 minutes. This is approximant, it may take a little less time or a little more. You may need to open your valves all the way to get them primed and flowing, but quickly choke them down using the valve on the kettle on the outlet side. It will not hurt these pumps not to run them at full speed, but choking them off on outlet side will allow liquid to remain in pump the entire time. The idea on sparging is to slowly pull wort from the bottom of the Mash Tun and move this to the boil kettle while putting clear, 170°F (77°C) water on the top. This hot water stops the sugar conversion process. The Sparge arm included with the Brau Tag, does an excellent job of gently putting the water on the top of your grain bed during this process. Your grain bed will start to act as a filter during this process and this will allow you to pull clean wort from the bottom and slowly, but surely extract the maximum amount of sugar possible from your grains. Another tip or technic that works well is to switch the heating from your HLT to the Boil Kettle as you start to collect a significant of wort in your boil kettle, maybe around half of the wort you expect to collect? This will allow you to speed up your brew day as heating your wort to boiling can take some time. We will cover how to set your boil controller in the next section, be sure to read this before using the boil controller for the first time!

The boil

Now that your spart is complete, you are ready to start your boil. Again, you will need to make some adjustments to your hoses for the next part of your brewing process. Below is a photo showing these changes as well as a description on the side.

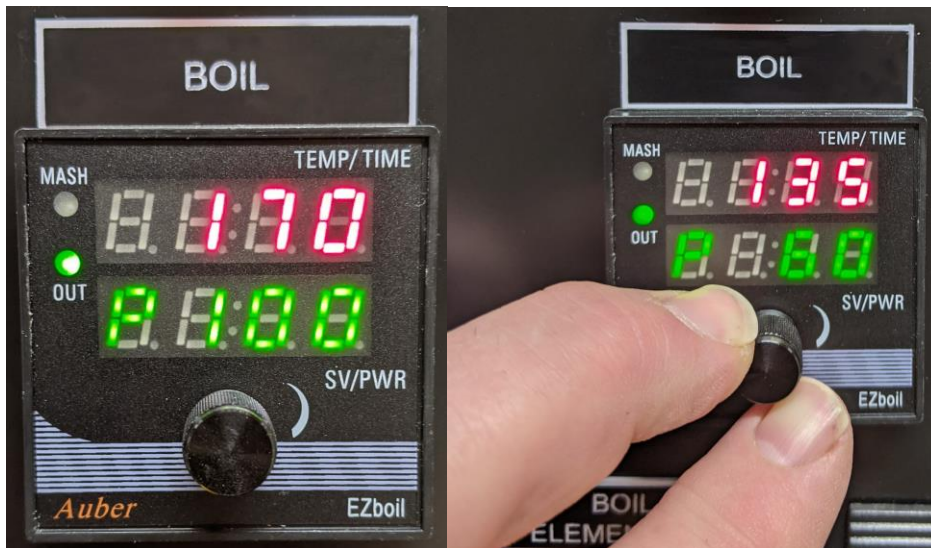


To hook up hoses to the boil kettle for whirlpool and final movement to primary fermenter simply put hose going from bottom of kettle to inlet on right pump (highlighted in Blue) Then put hose from top valve on boil kettle to outlet on pump (highlighted in red).

You will run pump at end of brew and during the cool down portion of the brew. This will do three things.

1. Whirlpool will push debris to the center so it will not go into fermenter
2. As you are cooling wort, it will cool faster due to whirlpool circulating wort over the coils of your wort chiller.
3. Moving your wort from Kettle to Primary Fermenter.

Boil Controller – See photo below and instructions to side



To set the percentage of power to the boil element simply turn the dial from 100% to 0%. Use lower levels at first and then you can raise these with experience. We recommend turning it down to 60% as you start to reach boiling. This will prevent boil over. Once you have used the system a few times you will get a feel of where to set boiler power at different stages.

So now your wort is in your boil kettle and you are ready to start the boil. The good news is that the boil is basically the same as you have done it when using other brewing systems. You just turn the knob to left and right to turn up the percentage of power going to the boil kettle. It is

possible to change the settings on this controller to do more advanced ways of bringing your boil to temperature, but we like to do it this way because it is simple and works great. Normally we will turn up the power to 100% as we are bringing the wort up to boiling temperature and then bring it down to around 60% to 80% as we get closer to boil. This prevents boil overs. Be sure to carefully watch the wort as it approaches 200°F (93°C). This is when boil overs start to prevent a danger. Once you have achieved boil and have put in your first hop addition (assuming you are doing a 60 hop addition at the beginning) you want to adjust power to give you a nice rolling boil, not a simmer, but not so strong that it might boil over. This is no different than any other boil you have tried to achieve while brewing with other systems.

Whirlpool

After a hard day of boiling your beer needs a nice whirlpool bath! You should already have your hoses in the correct position, so all you need to do is turn on the right pump. This will create a whirlpool action that will force the hops and other naughty bits in your boil kettle to the center of the kettle. That way when you pull the wort out it will be much cleaner. Do the whirlpool for a minimum of 20 minutes, we like to keep it running during the cooling process to also assist with faster cooling.

Cooling the Wort “keep a cool head while you chill your wort”

Cooling your wort on the Brau Tag system is not difficult, but the three most important things to remember when transferring wort from boil kettle are sanitation, sanitation, and sanitation. Remember, this is when your beer is the most venerable and the most vulnerable. Sanitize the hoses, wort chillers, fermenters, and anything else that can possibly come in contact with the beer. There are multiple methods for cooling your wort. With this system you may have a lot more wort (15 to 17 gallons) than you are used to cooling. We normally use the chiller setup shown in the photograph below, which is offered as an option on our systems. You can also use your existing chiller if you have one. The instructions in the box below are specifically for this chiller system with pre ice bath.

Combo Pack with Ice Chiller and Wort Chiller



To chill using our optional combo pack ice chiller an wort chiller just place the 50' wort chiller in the boil kettle at least 15 minutes before the end of the boil, this will sterilize the chiller. Place the 25" ice chiller coil in a 5 gallon bucket. Leave the whirlpool going on the boil kettle and turn on water coming from water hose. Let wort chill to around 15° to 20° over the incoming water temperature and then add ice to bucket so you will prechill the water. This will allow you to reach a good yeast pitching temperature.

That's it for the brewing. Just pitch your yeast as you normally would and get ready to enjoy 15 or more gallons of beer! You can use the pump to transfer your wort into your primary fermenter. This works with everything from buckets to large fermenters. One huge advantage of using the pump is that you can

transfer into the fermenter(s) with some force. Shoot the wort into the fermenter from above and add the yeast during this process. This will give you good agitation and supply oxygen for the fermentation!

Now comes the fun part....CLEANING!!!

Cleaning:

This system is easy to clean but can be a bit bulky at times. It is easier if you do some of the cleaning while you brew. For example, you can clean drain the HLT and wipe it dry after you finish using it, while you are waiting for wort to come to a boil. Take advantage of any hot water you have left over. We like to run hot water out of bottom of HLT, into inlet on left pump and then put outlet hose on one of the coil valves. Then run hose off other coil valve into a drain or bucket. You only want to leave clean water in coils. Also, leave coil valve open after you are finished cleaning.

To clean Mash Tun just scoop the spend grains out and remove false bottom. We normally then take the kettle outside and use a water hose to clean it up. You can also soak it in hot brew clean or at least put a few gallons of brew clean and then use sponge to clean kettle. Once it is clean rinse and turn upside down to dry.

Cleaning the Boil Kettle is the same as the Mash Tun, except we like to mix up a solution of Brew Clean and to at least the top of the coil and let it soak awhile and then use a scouring pad to thoroughly clean the heating element. It will often have some mineral buildup, but this will come off with Brew Clean and a little scrubbing. Once your system is clean let it dry thoroughly before storing.

Congratulations on your brew using the Brautag!