



BEER, BEER & MORE BEER

Brewing Sculpture User Guide

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Introduction

Thank you for purchasing a B3 Brewing Sculpture. We here at Beer, Beer & More Beer *lovingly* refer to these brewing systems as “Sculptures” due to the beauty of their design and their pure ease of use. These sculptures are engineered and designed with Computer Aided Design to insure reliability through symmetry and strength. Their use is intended to be a pleasurable experience by the brew master, as well as those who take part in its rewards, the beer.



Caution

Brewing is hazardous as it involves open flame, boiling liquids, flammable gas, combustion byproducts, hazardous chemicals, electricity, water, and other possible unforeseen risks. These systems are sold as out door use only. Attempting to brew indoors, without sufficient caution, appropriate safety gear, and attention to hazards can cause permanent injury, including, but not limited to, scrapes, cuts, burns, scalds, drowning, near drowning, shock, cardiac arrest, suffocation, sprains, broken bones, amputation, maiming, or death. Once the system is activated, do not leave the system unattended at any time! If at any time you are not absolutely certain you can exercise the necessary caution to brew safely and are willing to accept the risks inherent in brewing, you should cease brewing immediately.

Brewing System Overview

All of our brewing sculptures have several basic components in common. This section provides an overview to the basic components and their functionality.

Sculpture Components and Their Use

Let us take a moment to first discuss the Brewing Sculpture itself. While you might already be familiar with the different components this is a good review of why you bought a Sculpture and some of the thought that went into its construction.

The liquor tank is a hot water vessel that provides hot water for the brewing system. This hot water is often used for conversion of the grain to sugars, for controlling the temperature of the mash, and sometimes for cleanup after the brew session. The liquor tank on a B3 Sculpture is made of 304 stainless steel that is thirty thousands of an inch thick. A 90° angle spigot and a lid come standard with all pots. It has been fitted with a stainless steel temperature gauge that has a 3" glass face and a 2" bi-metal probe to insure accurate readings. The temperature range is in both Fahrenheit and Celsius, allowing you to choose whatever scale of temperature measurement you prefer. In addition to the temperature gauge, a fluid level sight gauge is included for measuring the amount of water in the kettle. The sight gauge attaches separately from the spigot to allow for a more accurate reading even while the fluid flows from the kettle.

Mashing is the process of converting grain into sugars. Lautering is the process of rinsing the sugars from the grain. The mash/lauter tun on the B3 Sculpture is used to convert the grain to sugars and rinse the sugars out into the brew kettle. It has a temperature gauge added for monitoring and recording the exact mash temperature. Within it, there is a raised, perforated false bottom made of 18 gauge, 304 stainless steel. The perforation is 3/32" holes on 5/32" centers for better recirculation to achieve a clear run-off right from the start. The false bottom, positioned 1 3/4 inches up from the bottom of the tun, has a handle for easy installation and removal.

The sweet wort is boiled in the brew kettle. This concentrates the sugars, builds melanoidin flavor compounds, extracts hop flavor and bitterness, and sanitizes the wort. The B3 Sculptures come with a kettle made of 304 stainless steel.

Once the wort has been boiled, it needs to be rapidly cooled. The B3 Sculptures come with an immersion chiller as standard. Upgrades include counter-flow and convoluted counter flow designs. The immersion chillers are designed specifically for the kettle size and the volumes of wort to be cooled. They have been engineered with fluid dynamics in mind, so the copper tubing used is 1/2", which increases the surface area in contact with the wort for greater transfer of heat. Coils are spaced infrequently at the bottom and close together at the top, so as the hot wort cools it drops down, creating a current, which brings the warmer wort to the top. This results in superior cooling in less time. The chiller is soldered on the top of the neck, which is out of contact with the wort. The lead free solder used on the chiller makes it more ridged than standard "slinky" type models, so it

retains the shape and coil frequency set in the shop. In and out ports are bent to 45° angles to eliminate hose kinking during the chilling process. The chiller comes with garden hose fittings attached for the cold water in and the hot water out. The lid has been notched to fit tightly around the chiller, reducing the chance of airborne contamination.

In order to heat the water for mashing and sparging, as well as boiling the wort, the B3 Sculptures come with cast iron burners as standard equipment. These have been selected for their longevity and superior flame pattern. The accompanying stainless burner shield is designed to create proper airflow. The 1-inch at the bottom allows air to enter freely, and the space at the top is greater to allow the hot air to rise straight up to the bottom of the vessels. The shields are made of stainless steel to prevent rusting and allow for a long life. The stand has no metal parts in the flame path to insure all the heat gets to the vessels for the greatest efficiency possible. Options include fully automated burners and natural gas porting.

The gas delivery system on a B3 Sculpture is constructed from durable steel piping. The gas ball valves are American Gas Association certified for gas service. The body and stem of the valves are brass with a chrome plated brass ball, and the seals are Teflon. The propane regulator has been specifically selected to provide the proper output for the burners that come with each Sculpture.

Sculpture Setup

Prior to your first brew, it is important to properly remove all packaging and clean the system thoroughly.

Unpacking

The shipping straps are under a great deal of tension and can cause great injury if mishandled. Use caution, clear all bystanders, and use appropriate protective gear when cutting the shipping straps. Remove all shrink wrap, cardboard, and paper from the system and kettles. Inspect all parts for shipping damage.

Initial Cleaning

Before your first brew, you need to clean off any manufacturing oils and dirt. First lightly scrub all of the brewing components with white, stainless steel safe, scrub pads and an appropriate detergent. You can use a little bit of liquid dish detergent for this initial scrub down or a warm solution of Five Star Powdered Brewery Wash (PBW), mixed to a strength of 2 ounces (by weight or volume) to 5 gallons of hot water (~110°F). If you have a pump driven system, recirculate hot PBW solution through the pump and hoses.

Clean the outside of the immersion chiller with PBW also or if equipped with a counter-flow chiller, clean the inside by recirculating hot PBW through the chiller with a pump for a minimum of 5 minutes.

Once all of the manufacturing and shipping dirt has been removed, empty all kettles, lines, chillers, and pumps and rinse thoroughly with clean, fresh water.

In between brews, if you store the equipment clean and dry, you will not need to use any soaps later.

Assembly

Set the stand in the location where you will be brewing. The B3 Sculptures are intended for outdoor use only. The ideal location is one that includes:

- ✓ a level area
- ✓ free of flammable materials
- ✓ excellent ventilation, to remove combustion gasses and steam, as well as provide plenty of fresh air
- ✓ a nearby source of electricity, if system includes a pump
- ✓ a nearby source of clean water

- ✓ a nearby drain for waste liquids

If your system is equipped with stabilizing feet, screw them into the stabilizing feet supports until they are all the way up and the system is sitting on the main base bars. If the Sculpture is not 100% stable, because the ground has imperfections, slowly adjust the feet down to provide stability only. **Do not try to support the entire system with the stabilizing feet.** They are provided to keep minor ground imperfections from allowing the stand to wobble, not to support the entire system. If the ground will not allow the Sculpture to sit flat on its base, select another location. Do not attempt to use the stabilizing feet as supports.

Make certain all gas valves are closed, and then attach the gas supply to the system regulator. Turn on the gas supply valve, open the regulator, and check all gas connections (including the threaded pipe connections along the entire gas distribution system) with a soapy water solution. If any gas leaks are evident, **do not use the system until leaks are resolved.** Once you are certain there are no leaks, carefully turn on gas to uppermost burner (usually the mash tun) by opening the red or yellow ball valve and ignite the burner using a long handled match or lighter. Lighting the upper most burner first helps purge the lines of air and only needs to be done once. If you have troubles igniting the burner, turn off the gas supply and allow the area to clear of gas for a minimum of 15 minutes until the area is clear. After confirming that a burner works correctly, shut it down and light the next lowest burner on the system. Test the remaining burners in the same manner.

If you are using the Digital Hot Liquor tank option you will need to:

- ❑ connect the hot liquor tank to the control panel
- ❑ fill the tank with enough water to raise the low water cutoff switch
- ❑ light the pilot light on the burner
- ❑ set the controller temperature to activate the burner

Refer to the section on the Digital Hot Liquor option for more information on setup and operation.

After testing each burner in turn, make sure they're all shut off by closing the gas valve leading to each burner and then place the boil kettle, mash tun, and liquor kettle in their respective places.

Mount the pump (if so equipped) in the pump holder and connect the hoses and sensors as needed. Refer to the sections covering any options you might have for diagrams on their proper configuration.

Once all of the system is assembled, you might want to fill the mash tun and hot liquor tank with water and do a test run of any pump, valves, controllers, chillers, or other options to familiarize yourself with how they work. This is especially recommended if you are new to all grain brewing.

Sample Brewing Session

Before brewing your first batch, make sure you have properly cleaned and set up your brew sculpture.

Recommended Accessories

In addition to the standard fermenting and sanitizing equipment you will need for brewing, we suggest you have the following items on hand. They will make the brewing process easier and more pleasurable.

- ❑ 3M White Stainless Steel Scrub Pads (For proper cleaning of stainless steel without scratching.)
- ❑ Powdered Brewery Wash (PBW for cleaning kettles and fermenters.)
- ❑ Wooden Yardstick (For measuring liquid amounts in the mash tun and boil kettle.)
- ❑ Long Handled Butane Lighter (For lighting the burners.)
- ❑ Step Stool (If you do not have the Step option, this will help you see/stir inside the mash tun.)
- ❑ Food Grade Hoses (For water in and out.)
- ❑ Mash Paddle (For doughing in the mash.)
- ❑ Large 21" Spoon (For whirlpooling the wort at the end of the boil.)

The Recipe

We are going to use the following single infusion mash recipe as the basis for explaining the operation of the equipment and the associated brewing calculations. You may substitute your favorite recipe for our sample, however be sure to make adjustments to the temperatures and other calculations as necessary for your recipe. This recipe is for a ten-gallon batch; cut this recipe in half or double this recipe if you wish to make a five or twenty gallon batch.

Style:	California Common
Size:	10 gallons
Boil Schedule:	60 minute
Mash Temp:	152 °F
Grains:	19 lbs. 2-Row 2 lbs. Crystal 60L 21 lbs. Total
Hops:	1.75 oz Northern Brewer Pellet Hops 7.3 AA for 55 minutes (31 IBU) 1.5 oz Northern Brewer Pellet Hops 7.3 AA for 15 minutes (7.1 IBU)

	1.5 oz Northern Brewer Pellet Hops 7.3 AA for 0 minutes (0 IBU)
O.G.:	~ 1.052
SRM:	~ 10
IBU:	~ 38.1
Yeast:	White Labs WLP008, San Francisco Lager

Preparation

Check to make sure all valves are closed on all brewing vessels. Place the SMART heat exchanger into the hot liquor tank so that it is not touching any of the temperature sensors inside the tank.

Next you will install the perforated screen in the bottom of the mash/lauter tun. We use this perforated screen, called a false bottom, to prevent the mash tun spigot from clogging or letting a bunch of grain through into the boil kettle.

Carefully install the false bottom by holding the handle and inserting it in the mash/lauter tun parallel to the temperature probe. Then, slide it under the probe and when it is in place, rotate the screen until the handle is positioned underneath the temperature sensors. This will make it easier to stir the mash without hitting the handle. Don't forget – the measurement you take for the volume of mash water will be from the top of the false bottom.

Slide the sparge ring up to the top of the slide rod, sliding the small rubber o-ring attached to the rod underneath the sparge ring bracket along with it to hold the sparge ring at its maximum height. Do the same thing with the float switch, bringing it to maximum height and supporting it there using the o-ring on the rod underneath the float switch bracket. Tilt the sparge ring up and out of the way.

If using the SMART system, attach all of the hoses, heat exchanger, and pump as diagramed in the section for the SMART option.

Water

If your water tastes good, chances are it is fine to brew with. If you have bad tasting water you may want to consider alternatives including bottled water. You should run the water through an activated carbon filter to remove chlorine and chloramines before using it for brewing.

Once you have obtained good tasting water you will need to check the pH of the water. The best way to check water pH is with a good quality pH meter. You can use pH paper but you will get a far more accurate reading with a meter.

You want the pH of your mash water, prior to the addition of grain, to be in the range of 5.7-6.0 depending upon the recipe. Dark roasted grains lower the pH farther than light colored grains. In general, the pH of the mash once the grain has been added should be in the 5.0 to 5.4 pH range. If you have a pH meter or pH paper, you can adjust the pH if needed with lactic or phosphoric acid additions. If you do not have a way to measure pH, we recommend using Five Star's 5.2 product.

When you add the grains to the mash, the darker the beer the more the pH will drop. Dark grains are naturally acidic. Adjusting the pH is not absolutely necessary, but proper pH helps avoid grain astringency, improves mash efficiency, helps with beer clarity, helps ensure proper fermentation, improves beer stability, and ensures a more consistent, repeatable beer.

The next step in preparing to brew is to calculate the amount of water you will need for the mash. The general rule-of-thumb is to use 1.1 quarts of water per pound of grain (although this may change depending on the recipe, the use of adjuncts, and other factors). Our sample recipe uses 21 pounds of malt, so the calculation is:

$$21 \text{ lbs} \times 1.1 \text{ qts (water)} = 23.1 / 4 \text{ (qts per gal)} = 5.78 \text{ gallons}$$

In order to make adding the correct amount of water to the mash/lauter tun simple, we will convert gallons to inches and use a ruler inside the tun to measure the water volume. For the five and ten gallon systems, each gallon of water equals 1.4" in height (for the 20 gallon system it is 0.83" per gallon). So the calculation is:

$$5.78 \text{ gallons} \times 1.4" \text{ (inches per gallon)} = \mathbf{8" \text{ (from the false bottom)}}.$$

Now place your ruler in the mash/lauter tun and add water (preferably filtered to remove chlorine, chloramines, and sediment) until the water level reaches 8" on your ruler.

Adjust the water chemistry as necessary in preparation for the mash.

Lower the sparge ring and put the lid on the mash/lauter tun.

Fill the hot liquor tank with water; this water should be filtered also (to remove chlorine, chloramines, and sediment). This water is used not only for sparging but also for cleaning and sanitizing, so fill the tank to a level just a few inches below the top of the kettle. Adjust water chemistry (pH, hardness, etc) as needed for the sparge and place the lid on the hot liquor tank.

Now that you have the correct amount of water in the mash/lauter tun, and you have the hot liquor tank full, turn on both burners. Heat the water in the hot liquor tank to 170 °F. This will take at least an hour in most cases, depending on the starting temperature of the water. You can adjust the amount of heat by using the heat control valve which is located on top of the propane regulator at the tank or the individual ball valves on each line.

Because our sample recipe uses a single infusion mash we will heat the water in the mash/lauter tun to between 160-170 °F. The optimum strike, or mash, temperature varies with the temperature of the grain and the ambient temperature. Ideally, for our example, we would like the mash to end up at 152 °F after the addition of the grain. Lower mash temperatures result in a more fermentable, drier beer. Higher mash temperatures result in a more dextrinous beer.

Mashing

Mashing is the term used for the process in which we convert the starches in the grains into sugars, or sweet wort. The heat and water in the mash tun activates the enzymes naturally present in malt. It is these malt enzymes that convert the starch to sugar over time.

Once the temperature of the mash water has reached the target temperature, it is time to dough-in. It's helpful to have an assistant help you mix the malt with the hot water. One person can slowly pour the malt into the mash tun while the other person stirs the grains thoroughly with the mash paddle to prevent dough balls from forming. Dough balls are pockets of dry grain that will not be converted, thus wasting precious grain and valuable starches. When stirring, avoid contact with the false bottom, to keep from driving grain through the openings. Stir for 3 minutes to ensure an even temperature through the mash. This also releases any air trapped in the mash. It is also important that while stirring you avoid striking any of the internal hardware as the temperature sensors can be damaged.

Once you have thoroughly mixed the mash, check the temperature gauge. If the temperature is a high, continue to stir the mash until the temperature drops to the appropriate level.

If you're brewing at room temperature you can expect a temperature drop of around 10 °F. Depending on grain temperature and the ambient outdoor temperature we have experienced temperature drops in the range of 5 to 16 °F when adding the grain. With experience, you will become accustomed to the proper temperature differential for your environment and technique.

Once the correct mash temperature is reached, tilt the sparge ring back into the kettle and slide the ring down the rod until it is lightly resting on the surface of the mash. Adjust the float sensor so that the bottom of the sensor is about 1" above the surface of the mash. Place the lid on the kettle and let the mash proceed for about one hour.

If using the SMART or Digital SMART system, you will set the controller to 152°F and allow the recirculation to maintain the mash temperature for the entire duration of the mash. The pump will switch on and off automatically to recirculate the mash liquid through the coil in the hot liquor tank and back to the top of the mash tun. This will clarify the wort and will allow you to keep the temperature steady during the entire mash.

Sparging

Once the enzymes convert the starches into sugars, we need to rinse the sugars out of the grain into the boil kettle. That process is called sparging.

While the malted grains are converting in the mash, make sure the sparge water has reached about 170 to 175 °F. The temperature will drop a few degrees by the time it reaches the grain, depending on the ambient temperature. You want to make sure the sparge water does not exceed 170 °F as it contacts the grain, as it can extract the tannins from the grain husks.

After the mash has sat for one hour, the enzymes have converted the starches into sugars. If Connect the sparge ring to the liquor tank. If you're using a SMART system, you'll close the valve on the bottom of the mash tun, disconnect the hose from that valve and reconnect it to the valve exiting the hot liquor tank. The pump from the SMART system will pump the water up to the top of the mash tun. If you're using a gravity fed system, open the valve on the liquor tank and allow at least one inch (more is ok) of water to slowly accumulate on top of the grain bed in the mash tun. If you have a system with a pump, start the pump to put the sparge water into the mash tun.

Water seeks the path of least resistance on its way through the grain, so maintaining a minimum level of one inch of sparge water on top of the mash during the sparging process is crucial to getting an efficient extraction of sugars. Be careful to transfer your sparge water gently, as you do not want to disturb the grain bed too much.

If you're using a SMART or Digital SMART system, the wort should be clear and ready to runoff into the boil kettle. If you're not using a SMART or Digital SMART system, you'll need to recirculate some of the liquid to get a clear runoff from the mash. When recirculating, the mash itself acts as a filter. Open the bottom valve on the mash tun and collect some of the sweet wort in a clean, heat resistant container. Gently pour this wort back onto the top of the mash. Repeat this step until you can no longer see significant pieces of grain exiting the mash tun.

Once the wort is clear, attach a hose to the mash tun outlet. The hose should reach the bottom of the boil kettle. This will allow the sweet liquid to run out into the boil kettle without splashing, which helps prevent hot side aeration and off flavors in the finished beer. Next, open the mash tun valve slightly to produce a slow trickle of wort into the boil kettle. Try to set the flow so that the flow of water from the hot liquor tank into the mash tun is about the same as the flow out of the mash tun into the boil kettle. The sparge should last between 45-60 minutes; the slower the sparge, the better the sugar extraction. Forty-five to sixty minutes allows ample time for the sugars that are in the grain to dissolve into the hot water and get carried down into the boil kettle. The flow can be set by eye (you will get good at judging after a batch or two) or more scientifically by dividing sparge water by 60 minutes and setting a flow rate accordingly. If it is your first time and your sparge is accidentally over in 30 minutes don't sweat it, you just left a little sugar behind.

Once you have your flow set and you have a couple inches in the boil kettle go ahead and light the boil kettle burner, but keep it on a low flame.

Boiling

If you have brewed before, you'll be familiar with everything from here on out. The boil should last at least an hour for best hop utilization. There are just a few recommendations we at B3 would like to make.

During a one-hour boil you should expect to lose at least one gallon of fluid from the kettle, about 10 percent. In cold weather, you may want to heat up to a boil with the lid on, but make certain you remove the lid for the actual 60 minutes of the boil. A vigorous, uncovered boil ensures the precursors to dimethyl sulfide (DMS) are driven off from the wort and do not end up causing a vegetal flavor and aroma in the finished beer.

There is a small brass hook attached to the stand at a level just below the lip of the kettle. This hook is designed to hang hop bags by their strings into the boil kettle, keeping them off the bottom and making them easier to retrieve. By using hop bags, less hop vegetable matter will enter the fermenter. In our years of packaging hops we can honestly recommend pellet hops as the freshest option. Not that whole hops are bad, but pellets tend to store better than whole hops do. But certainly feel free to use whole hops. If you use whole hops, you will probably want to purchase the boil-kettle stainless-steel screen option to allow you to use whole hops effectively.

The immersion chiller should be connected to the water source prior to putting it in the boiling wort, though the water should remain off initially. The line for hot water out must be connected to an appropriate hose (one which can withstand the high temperature water from the chiller output) and directed away from people and pets. If there is any residual water in the coil, it will turn to steam, and erupt violently, spraying scalding steam possibly on you or others. Place the immersion chiller in the boil kettle at least fifteen minutes prior to the end of the boil to sanitize it. Once the boil is complete, turn off the burner, cover the boil kettle with the notched lid, and turn on the cooling water.

Once your wort has cooled to a temperature safe for pitching your yeast, you can run it out of the boil kettle into your fermenter.

If you're using a counter flow chiller, sanitize it by pumping hot (>180 °F) water from the hot liquor tank through the chiller and back into the hot liquor tank for twenty minutes. Sanitize your counter flow chiller just prior to every use.

Remember to record your processes and any measurements during the brew session. This information becomes very, very important whether you want to recreate a previous recipe or create a new recipe.

Clean Up

After the wort is in the fermenter it is time to clean up the system. First turn off the gas supply at the tank or main feed line.

Remove the lid from the mash tun and let the grains cool. Run any remaining liquid into a bucket and discard. Dump the grains into the compost pile or discard in an appropriate manner. Remove any equipment connections to the mash tun and remove it from the system. Carefully remove the false bottom and clean all traces of grain from it. Clean the mash tun removing all grain and sugars. Rinse completely. Turn the mash tun upside down and let dry.

If your system uses a counter flow chiller, add PBW to the hot liquor tank and recirculate the solution through your chiller to clean any protein buildup from the inside. Rinse the chiller and pump thoroughly with fresh water afterward.

Disconnect the electrical supply, if your system uses electricity.

Remove the hot liquor tank and any equipment connections to it. Rinse thoroughly, if you added PBW. Turn it upside down to drain and dry completely.

Empty any remaining liquid from the boil kettle and let cool. Use warm water, PBW, and a white 3M Stainless Scrubbing pad to remove any buildup. Turn the boil kettle upside down and let dry.

Wipe down the stand, removing any spilled wort or grains. Dry thoroughly with a clean towel.

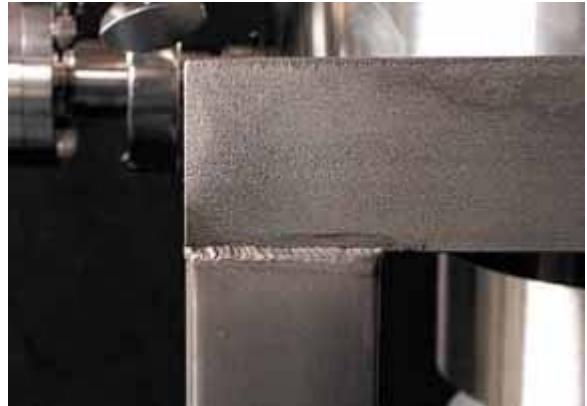
Sculpture Frame

Sculpture frames come in several different formats. There are vertical trees, horizontal stands, and multi-level tiered systems.

Frame Construction

The stand is the core of any all grain brewing system. The standard B3 stands, made of 0.065" steel, are strong, compact, surprisingly light weight, have the correct gravity drops from vessel to vessel, and are treated to withstand the elements.

Stands are designed to fit within any 8' ceiling and through any 25" door. They are constructed with the smallest footprints possible while retaining maximum stability and strength. There is no excess metal, which translates into surprisingly light frames that are easy to maneuver.



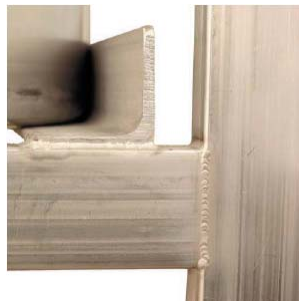
The kettles are supported by 3/16" angle iron on the sides and 3/16" flat bar on the ends with no metal directly beneath the kettles. The design minimizes heat transfer into the stand itself, which conserves gas and results in quick and efficient heating of the kettles.

We prep the standard stands, post welding, with a metal prep and then paint with black 1200 °F heat resistant paint. Stainless steel stands are rust resistant and do not need require paint. Painted stands should be touched up as needed and repainted annually.

For maintenance, clean any spilled wort and dry the stand after each brew session.

Stainless Stand Option

This option is a material change of the stand, from steel to stainless steel. Each joint is TIG welded (Tungsten Inert Gas) by hand, and then we use a machine to clean the weld of any impurities as well as remove any discoloration. For ease of maintenance, wipe down after using with a clean, damp towel, as it is much easier to clean right after use. Try not to use abrasive materials when cleaning the stainless. If it won't come clean with a wet cloth, you might want to use our CE27 White Scrub Pads, which is a tightly woven pad specially designed to not scratch stainless steel.



TIG Welded Stainless Joint

Tippy Dump

The Tippy-Dump mash tun allows you to easily dump out your spent grains, saving time and effort. The mash tun is supported by a stainless basket that rotates on a triangular base, allowing the whole unit to pivot. After mashing is complete and the grains have cooled, unlock the mash tun and rotate it to dump the spent grain down the stainless steel grain chute and into a trash can.

Be sure to **disconnect all sensors and hoses** before removing the tippy-dump lock and dumping the grains. The tippy dump cannot be completely tipped if these remain connected, and they can cause the kettle to be pulled off the pivot point if the kettle is tilted while they remain connected. This can result in damage to the system.

Wheelbarrow Option



On the 1550, 2000, and 2050 we offer an option that allows you to easily and safely move the system. On the back of the frame we weld on two casters that are about 1/2" off the ground. On the front of the frame we weld in two retractable stainless handles. When moving the system, slide the handles out and lift like a wheelbarrow. When the frame is lifted the wheels touch the ground and you can easily move the system around. When not moving, the system is completely stable.

Warning: Do not move the system with liquid in the kettles or gas connected.

Step-up Option

The Step-Up option is a welded step attached to your system which is completely stable and never gets misplaced. It allows you to step-up to stir-in the grain or monitor the mash.

Warning: Use caution when stepping onto the step. Slipping and falling are potential hazards anytime you are elevated. Do not step up when the burner is in operation, as it can ignite clothing, cause serious burns, and/or cause asphyxiation.

S.M.A.R.T. Option

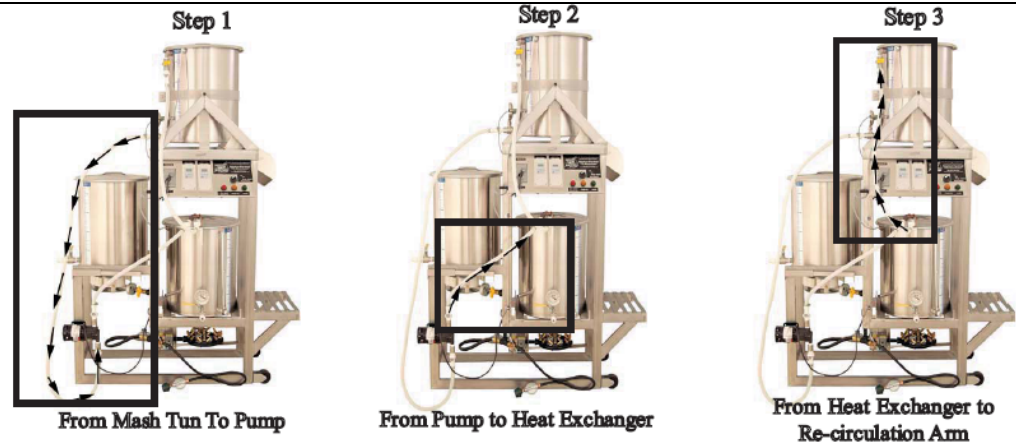
Step Mash Adjusted Recirculation Temperature. While the acronym is a bit of a stretch it does live up to its name. It is a smart way of doing temperature-adjusted step mashing. The basic concept is to recirculate the wort from the mash tun, through a pump, through the heat exchanger that sits in the hot liquor tank, then back on top of the mash again. This gently heats the mash without the scorching that direct heat can cause, and the re-circulation creates almost crystal clear wort.

SMART Setup



Before stirring in the grain to the water, make sure the sparge arm is at the top of the mash tun. **(Step 1)** With this option you have quick disconnects, you can either use tubing to connect the pump to the ball valve of the mash tun, or connect the pump directly to the ball valve. The advantage to hooking the pump right up to the ball valve is that it gets it up out of the way, and you don't have as many cavitation issues. So, with the pump connected to the mash valve either directly or by tubing, run a second tube from the "out" of the pump to the heat exchanger **(Step 2)** that is sitting in the hot liquor tank. Connect the third and last hose from the out of the heat exchanger to the sparge/return arm of the Mash Tun **(Step 3)**.

Cavitation: When the pump stops pushing liquid through as it's pump head is full of air. These pumps are not self-priming (a self-priming pump can pull air through until liquid is reached), and only push along liquid. Many things can cause cavitation, usually air when a seal is not tight, or not enough liquid is getting into the pump. An easy way to push out a cavitation if it occurs during it's use is to pulse the power to the pump 3 times (a simple way is to pull out the plug), then give it full power



How to use SMART or Digital SMART

1. Connect tubing (or pump) to the ball valve of the mash tun
2. Connect tubing from mash tun to pump (ignore if you put pump right on mash ball valve)

3. Connect tubing from the pump to the “in” of the heat exchanger (that is in the HL tank)
4. Connect tubing from the “out” of the heat exchanger to the sparge/re-circulation arm
5. Open the valve for the mash tun out, the valve for the mash tun recirculation arm, and the valve for the pump “out” (if so equipped).
6. Make sure mash liquid flows out of the pump outlet side before turning the pump on (if not troubleshoot why)
7. Plug in pump and control the flow as necessary (see below).

Mash Tun – An important thing to note before calculating your mash water is that you need to have a thinner water to mash ratio. This is usually about 1.3 quarts of water per pound of grain. This allows you to pump the mash liquid without making the mash bed too thick. When you start to recirculate the wort, a fair amount of the liquid will leave the mash to fill the tubing and pump. If you do not start with enough water, the mash can end up too thick for recirculation.

Hot Liquor Tank – Your hot liquor tank should be kept about 5 to 10 degrees higher than the mash temperature you want to reach. The greater the amount of water in the hot liquor tank, the greater the ability to change the temperature of the mash. The more water you have in the hot liquor tank the greater the thermal mass. Two gallons of 180 °F water has less thermal mass than six gallons of 170 °F water.

Using the SMART Brew System – Every SMART system includes two or three valves controlling the flow of liquid, depending on the system and other options you might have. There will be one valve at the mash tun “out” before the pump, one valve at the sparge/return arm of the Mash tun “in,” and in some configurations, one valve at the “out” of the pump. Before plugging in the pump, open all three valves fully and check for leaks anywhere along the line and then plug in the pump. You should then have wort flowing through the system. Wait for any bubbles to travel through the lines and then put some back pressure on the pump using the valve at the sparge/return arm. Usually the valve needs to be about ½ to ¾ open on most styles, a little more closed (slower flow) when a lot of adjuncts or a large wheat malt percentage is used because of the more viscous nature of some adjuncts .

The temperature of the mash may actually go down a little at first, as it takes a little while for the wort to move down through the grain bed. Once the heated wort travels through the grain bed it will travel past the temp sensors and you will see a temperature increase.

If your hot liquor tank is a lot hotter than your target mash temperature, you’ll want to turn the pump off a few degrees below the target temperature. When doing a big raise (over 10 °F) you can sometimes overshoot the desired temperature, since it takes a little while for the mash bed to even out and reach a consistent temperature reading across the entire mash.

Mash/Lauter Tun

Mash Tun Overview

The mash/lauter tun has a temperature gauge added for monitoring and recording the exact mash cycle. Within it, there is a raised, perforated false bottom made of 18 gauge, 304 stainless steel. The perforation is 3/32" holes on 5/32" centers for better recirculation to achieve a clear run-off right from the start. The false bottom is positioned two inches up from the bottom of the tun. It is fashioned with a handle for installation and removal.

All kettles come standard with chrome plated ball valves, with stainless valves as an option. Chrome plated ball valves work fine and we have used them on one of our own systems for 4+ years. However, a stainless valve is probably a lifetime valve. The upgrade includes three pieces per kettle, the nipple from the kettle to the valve, the valve, and the stainless barb that your tubing will connect to. Pump systems do not use the barb and instead have brass quick disconnects.

Liquor Tank

Overview

Starting with the liquor tank, a hot water vessel made of 304 stainless steel that is thirty thousands of an inch thick. It has been fitted with a stainless steel temperature gauge that has a 3" glass face and a 2" bi-metal probe to insure accurate readings. The temperature range is in both Fahrenheit and Celsius, allowing for whatever system of temperature measurement you use. In addition to the temperature gauge, a fluid level sight gauge is included for measuring the amount of water in the kettle. The sight gauge attaches separately from the spigot to allow for a more accurate reading while the fluid flows from the kettle. The sight gauge seals with two o-rings, one on the top and one on the bottom. If it should leak, tighten the upper cap to compress the o-rings slightly and seal the leak. Do not over tighten.

All kettles come standard with chrome plated ball valves, with stainless valves as an option. Chrome plated ball valves work fine and we have used them on one of our own systems for 4+ years. However, a stainless valve is probably a lifetime valve. The upgrade includes three pieces per kettle, the nipple from the kettle to the valve, the valve, and the stainless barb that your tubing will connect to. Pump systems do not use the barb and instead have brass quick disconnects.

Digital Hot Liquor



Overview

This incredible option maintains your hot liquor tank within two degrees of set temperature. A digital controller monitors temperature through a thermowell that we weld into the hot liquor tank. The controller turns the burner on and off through an automated gas valve that comes complete with a pilot light. One advantage is that you never have to watch the temperature on your hot liquor tanks again. The real advantage, however, is when it is used in combination with a SMART system. A SMART system is basically transferring heat from your hot liquor tank to your mash tun. This option insures that even though you are taking heat out of your mash tun during a SMART your temperature never drops more than a degree below set point.

Warning

- ✓ All devices that control gas are dangerous. Please use care and caution when using or modifying your gas system.
- ✓ Do not leave the system unattended! If the burner will not light, shut off the gas and diagnose the problem.
- ✓ Do not use in wind. Wind can cause the burner to not fully light. All jets put out gas whether they are lit or not.
- ✓ Use only in adequate ventilation. Carbon monoxide kills.
- ✓ Make sure you have access to the main valve on your propane tank in case of emergency.
- ✓ Please have a fire extinguisher handy.
- ✓ Do not bypass the low-pressure regulator. This system is designed to run at a specific pressure. Running the system at higher pressure can cause gas leaks and explosions.

Lighting the Pilot

1. The multifunction valve is located to the left of the burner, behind the shield and is labeled On, Off, and Pilot.
2. Turn on the propane supply.

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3. Turn the multifunction valve to Pilot.
4. Press in and hold the multifunction valve knob and light the pilot light at the burner.
5. Continue pressing in the valve knob for 45 seconds.
6. On releasing the valve knob, the pilot should stay lit. If not, check the thermocouple to ensure that it is in the flame of the pilot. Do not use the system if you suspect a malfunction.
7. Once the pilot stays lit, turn the multifunction valve to On.

Using the Tank

1. Fill the kettle with water.
2. Set the desired temperature on the controller.
3. If the temperature set is higher than the temperature of the water, the burner should light.
4. When the water is below the level of the float switch, the burner will not turn on.
5. If the water is below the level of the thermowell, the temperature reading will be incorrect.
6. Make certain to shut off the multifunction valve and main propane supply when you have finished with the hot-liquor tank.

Boil Kettle

Boil Kettle Overview

The brew kettle comes with an immersion chiller designed specifically for the kettle size and the volumes of wort to be cooled (a counter flow chiller is optional). The chillers have been engineered with fluid dynamics in mind, so the copper tubing used is 1/2", which increases the surface area with the wort for greater transfer of heat. Coils are spaced infrequently at the bottom and close together at the top, so as the hot wort cools, the cold drops down, forcing the warmer wort up. This results in superior heat transfer in less time. The chiller is soldered on the top of the neck, which is out of contact with the wort. The lead free solder used on the chiller makes it more ridged than standard "slinky" type models, so it retains the shape and coil frequency that we set in the shop. In and out ports are bent to 45° angles to eliminate hose kinking during the chilling process. The chiller comes with garden hose fittings attached female for the cold water in and male for the hot water out. The lid has been notched to fit tightly around the chiller, reducing airborne contamination.

All kettles come standard with chrome plated ball valves, with stainless valves as an option. Chrome plated ball valves work fine and we have used them on one of our own systems for 4+ years. However, a stainless valve is probably a lifetime valve. The upgrade includes three pieces per kettle, the nipple from the kettle to the valve, the valve, and the stainless barb that your tubing will connect to. Pump systems do not use the barb and instead have brass quick disconnects.

Boil Kettle Screen Option

This is a great option when you plan on using whole hops. This is a stainless perforated screen with a handle that sits on the bottom of the boil kettle above the valve. It will keep whole hops in the kettle so they don't clog the valve.



Diverter Plate Option

This is a great option when you primarily use pellet hops and plan on using a counter-flow chiller. When the above two criteria are met, you can employ a whirlpool technique that is used in many microbreweries. After boiling, take your mash paddle or a big spoon and stir the wort in a circular motion for at least a minute. Let the whirlpool go for up to 20 min and it will draw the trub and hops into the center where they will settle once the whirlpool slows down. The plate, a rounded piece of stainless sheet metal that is spot-welded on the bottom, keeps a majority of trub and hop material from exiting your kettle valve.



Gas Delivery System

Gas Delivery System Overview

The *gas delivery system* is constructed from durable steel piping. The gas ball valve is American Gas Association certified for gas service. The body and stem are brass with a chrome plated brass ball, and the seals are Teflon. The propane regulator has been selected for use with the burners that come with the sculpture.

Always check for leaks using a soapy water solution or a commercial leak detector. If any part of the gas delivery system leaks, do not use the system. All parts are replaceable. Call Beer, Beer & More Beer before continuing with the system.

Burners

Burners Overview

The **cast iron burners** have been selected for their longevity. The accompanying stainless burner shield is designed to create airflow. The 1-inch at the bottom allows air to enter freely, and the space at the top is greater to allow the hot air to rise straight up to the bottom of the vessels. The shields are made of stainless steel to prevent rusting and allow for a long life. The stand has no metal parts in the flame path to insure all the heat gets to the vessels for the greatest efficiency possible.

The standard burner is designed to use propane and comes with a high-pressure, low-volume regulator.

Natural Gas Option

Natural gas is an option that we can provide on any our Sculptures. The 5 gallon Sculptures use our H200 burner and are specially jetted for natural gas. With the 10 and 20 gallon systems the burner is cast iron with 21 individual jets with an amazing 200,000 btu output and a very wide flame pattern. Installing this system requires a plumber, have a plumber give you a quote before you order this option. Remember this is for outdoor use only!

Natural gas burners work and function just like the propane burners, however they require a low-pressure, high-volume regulator, which is the opposite from the needs of propane. They are not interchangeable. When setting up a natural gas system, a qualified plumber should be consulted before hooking up the system. Be sure to use in a well-ventilated area, we suggest using a Carbon Monoxide detector near the system. These are designed to be used outside, if this is going to be used in-doors, please let us call to discuss.



Natural Gas Burner

Control Panel

Control Panel Overview

The control panel option comes in a standard and a deluxe model.



The control panel is optional with either the digital SMART or Digital Hot Liquor, but becomes mandatory when you get both. It organizes the controllers and subsequent wiring and is truly the icing on the cake.

Standard Control Panel

This control panel comes with two digital temperature controllers, one for the mash tun and one for the hot liquor tank.

The mash tun controller controls the pump (which recirculates the mash liquid), not the burner under the mash tun.

The hot liquor tank controller controls the burner under the hot liquor tank.

To the left of the controllers is a duplex electrical outlet. The top receptacle is always on. The bottom receptacle is controlled by the mash tun controller. The pump, when recirculating the mash, should plug into this lower outlet.

On the right side of the control panel is the Edison plug, which is used for power into the control panel. Plug one end of a heavy-gauge, grounded utility cord into this receptacle. The other end should go to a GFI protected outlet of appropriate amperage.

Deluxe Control Panel

The Deluxe Control Panel adds several additional features.

- ❑ Built-in float switch in mash tun controls the pump to keep the right amount of water in your mash tun at all times during the sparging process.
- ❑ Integrates 4 way switch into the control panel that controls power to the pump so that you don't have to plug and unplug it or switch from a controlled outlet to an always on outlet. In the "off" position the pump does not receive power. In the "Temp Switch" position the pump is controlled by the Digital SMART system to maintain and or raise mash temperatures. In the "Float Switch" position the pump is controlled during sparging by the float switch in the mash tun. In the "On" position the pump is turned on for other duties you might have like pumping wort from the boil kettle to a fermenter, sanitizing, etc.
- ❑ There are 3 lights installed on the control panel to instantly tell you when the control panel is plugged in, when the hot-liquor burner is on, and when the pump is on.

Digital Controller



Digital Controller Overview

Systems come configured with digital controllers to automate various features based on temperature. Regardless of what they control on the system, they are all programmed in the same manner.

Procedure	Indicator	Description	Display
To start programming, press the SET key once to access the Fahrenheit/Celsius mode. The display will show the current status, either F for degrees Fahrenheit or C for degrees Celsius. Then Press either up or down arrow key to toggle between the F or C Designation.	F or C	Fahrenheit or Celsius Scale	
Press SET key again to access the setpoint. The LCD will display the current setpoint and S1 annunciator will be blinking on and off to indicate that the controls in the setpoint mode. Then press either the up key to increase or the down key to decrease the set point to the desired setting.	S1 (blinking)	Setpoint Temperature	
Press SET key again to access the differential. The LCD will display the current differential and DIF1 annunciator will be blinking on and off to indicate that the controls in the differential mode. Then press either the up key to increase or the down key to decrease the differential to the desired setting.	DIF 1 (blinking)	Differential Temperature	
Press SET key again to access the cooling or heating mode. The LCD will display the current mode, either C1 for cooling H1 for heating. Then press either the up key or the down key to toggle between the C1 or H1 designation. Press the SET key once more and programming is complete.	C1 / H1	Cooling or Heating mode	

The temperature setpoint refers to the temperature at which the output relay will open or close, depending on the other settings. When cooling mode is selected, the differential is above the setpoint. The output relay de-energizes as the temperature falls to the setpoint. When heating mode is selected, the differential is below the setpoint and the relay de-energizes as the temperature rises to the setpoint. In general, the controllers for the brewing system are always used in heating mode.

Pump

High Temperature Polysulphone Pump

After selling thousands of pumps we had the ideal brewing pump custom built for Beer, Beer & More Beer by March Manufacturing. The main factors we were looking for was a pump that was constructed of food-grade material, would handle wort at boiling temperature, take back pressure (flow restriction), and cost under \$150. We chose to have the pump housing made from polysulfone because it is a tough, food-grade plastic rated to temperatures as hot as 250F. It offers many of the benefits of the ideal material, stainless steel, without the prohibitive cost.

We wanted the pump to be brewer friendly so we had March install a bracket so that it can be mounted. We also had a 6' power cord with plug wired in for easy use. This is a tough little pump with a 1/25 hp, continuous-duty 1.4 Amp motor which can be run non-stop for extended periods.

This pump has a maximum flow of 7.2 gpm with a maximum head of 12 feet. For an example of typical usage: with a head of 6' it will pump 3.25 gpm and with an 8' head it will pump 2.5 gpm. 1/2" mpt fittings on both inlet and outlet. Materials in contact with solution are Polysulfone, 316 stainless steel, silicon rubber, Raton and Teflon. Shaded pole, thermal overload protected, single phase motor is fan cooled. The pump can handle internal pressures to 150 psi. Max pressure the pump can produce in a closed system is a little over 5 psi. Face unscrews and rotates at 90 degree intervals to adjust to your application.

These are magnetic drive pumps. The magnetic drive acts as a clutch allowing the user to put backpressure on the pump to slow down flow. Since it is magnetic drive, it is not self priming, you must put the pump under the level of the liquid source. Large air bubbles in the line can cause cavitation.

Avoiding Cavitation

- ✓ Make certain every valve in the circuit is in the full open position before starting the pump.
- ✓ Allow the fluid about to be pumped to reach equilibrium (settle) before pumping.
- ✓ Make sure that all tubing clamps and connections are snug, not allowing air to enter the lines.
- ✓ When pumping fluid at or close to boiling temperatures, restrict the pump to 50% flow.
- ✓ When doughing-in the mash, make sure to relieve any air trapped under the false bottom or in the grain bed.

Valves

Brew Sculpture Option A - Stainless Ball Valve Upgrade

Stainless Steel Ball Valve upgrade – They are pretty straightforward in their use. Simply open the ball valve by moving the handle to a non-perpendicular angle to the ball valve. You can adjust the flow rate by moving the angle of the handle the valve is fully open when in line with the valve itself. There may be a locking slide on some of the valves, if this is true on yours, then you will need to slide it away from the valve body on the handle to allow movement of the handle.



Fully Open



Partially Open



Closed

Water Filter

Brew Sculpture Option B - Water Filter Package

This will come separate from the brew sculpture; it is your option to mount it on the system or just near it. Most customers mount it near the system, as most frames don't have much space that doesn't get hot from the burners. The kit will have the mounting hardware needed to mount it on most surfaces. Before its first use, open the filter housing and remove the plastic wrap around the filter. Run a gallon of water or so to remove any loose carbon before its first use. To fill the kettle, place the copper hook over the side of the kettle you wish to add water to and turn on your water source.



Water Filter Kit

Hint: Only filter cold water. Filter water at a controlled rate, the slower the water goes through the carbon filter, the more the filter will remove.

Quick Connects

BrewSculpture Option C - No Brass Option

There really are no instructions for this option, except for if the system has quick disconnects. The polysulfone quick disconnects will click together by simply sliding the female over the male until you hear it click. To unfasten, simply press down on the darker gray piece of the female quick disconnect and pull it away from the male quick disconnect. Hint: Store the quick disconnects dry and they should last a lifetime, the rubber o-rings are replaceable as well. While the quick disconnects can handle the heat, they cannot be put in an open flame or they will disfigure.

Benefits of Polysulfone

1. The quick disconnects are plastic, so they are very smooth and don't transfer temperature well. What this means to you is that they are very easy to clean, and when you grab them, they won't be near the temperature of what was just in them. Very handy right after a 170°F sparge.
2. Liquid flow can go either direction. We put all the female fittings on the tubing, so that any tubing can be used for almost any job.
3. The latch is a simple push button that can be released with one hand. This allows you to not need two hands when moving your tubing configurations around.



Polysulfone Quick Connects

Warranty

We take great pride in producing products that provide the greatest customer satisfaction possible. All B3 Brewing Sculptures carry a lifetime guarantee against defects in manufacturing. Sculpture parts and subsystems which are not manufactured by Beer, Beer & More Beer carry their respective manufacturers warranty and all our covered by our customer satisfaction guarantee.

Limited Warranties and Return Policy

B3-branded hardware products purchased in the U.S. or Canada come with either a lifetime limited warranty or a one year limited warranty. The following sections describe the limited warranties and return policy for the U.S.

What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your — our end-user customer's — B3-branded hardware products.

What is not covered by this limited warranty?

This limited warranty does not cover problems that result from:

1. External causes such as accident, abuse, misuse, or problems with electrical power
2. Servicing or alteration not performed or authorized by B3.
3. Usage that is not in accordance with product instructions
4. Failure to follow the product instructions or failure to perform preventive maintenance
5. Problems caused by using accessories, parts, or components not supplied by B3
6. Products for which B3 has not received payment

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). B3's RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST CONSUMABLE MATERIALS. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE.

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.

How long does this limited warranty last?

This limited warranty lasts for the lifetime of the original buyer or one year, depending on the product. The limited warranty on all B3-branded products begins on the date of the packing slip or invoice. The warranty is not transferable. The warranty period is not extended if we repair or replace a warranted product or any parts. B3 may change the availability of limited warranties, at its discretion, but any changes will not be retroactive.

What do I do if I need warranty service?

Before the warranty expires, please call us at the number listed below. Please also have your order number available.

Beer, Beer & More Beer
975 Detroit Ave • Unit D
Concord, CA 94518
info@morebeer.com
Phone 1-800-600-0033

What will B3 do?

During the first year of the limited warranty we will repair any B3-branded hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the product to you freight collect.

If we determine that the problem is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis.

NOTE: Before you ship the product(s) to us, make sure to clean and drain all liquids or solid brewing materials from the system. Remove any confidential, proprietary, or personal items that are not part of the original product.

During the remaining years: For the remaining period of the limited warranty, we will replace any defective part with new or refurbished parts, if we agree that it needs to be replaced. When you contact us, we will require a valid credit card number at the time you request a replacement part, but we will not charge you for the replacement part as long as you return the original part to us within 30 days after we ship the replacement part to you. If we do not receive the original part within 30 days, we will charge to your credit card the then-current standard price for that part.

We will pay to ship the part to you if you use an address in the United States, (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the part freight collect. We will also include a prepaid shipping container with each replacement part for your use in returning the replaced part to us.

How will B3 fix my product?

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to B3, some of which were never used by a customer. All parts and systems are inspected and tested for quality. Replacement parts and systems are covered for the remaining period of the limited warranty for the product you bought. B3 owns all parts removed from repaired products.

May I transfer the limited warranty?

No, the warranty is not transferable.

Total Satisfaction Return Policy (U.S. Only)

We value our relationship with you and want to make sure that you're satisfied with your purchases. That's why we offer a Total Satisfaction return policy for most products that you, the end-user customer, purchase directly from B3. Under this policy, you may return to B3 products that you purchased directly from B3 for a credit or a refund of the purchase price paid, less shipping and handling and applicable return fees as follows:

New Products and Accessories: Unless you have a separate agreement with B3, all hardware, accessories, peripherals, parts and unopened ingredients still in its/their sealed package, excluding the products listed below, may be returned within twenty-one (21) days from the date on the packing slip or invoice.

Exclusions from the foregoing return policy:

Reconditioned or Refurbished B3-Branded Hardware Products and Parts: All reconditioned or refurbished products may be returned within fourteen (14) days of the date on the packing slip or invoice.

How to Return: To return products, e-mail or call B3 customer service to receive a Credit Return Authorization Number within the return policy period applicable to the product you want to return. You must obtain a Credit Return Authorization Number in order to return the product.

You must ship the products to B3 within five (5) days of the date that B3 issues the Credit Return Authorization Number. You must also return the products to B3 in their original packaging, in as-new condition along with any media, documentation, and all other items that were included in the original shipment, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

NOTE: Before you ship the product(s) to us, make sure to clean and drain all liquids or solid brewing materials from the system. Remove any confidential, proprietary, or personal items that are not part of the original product.