

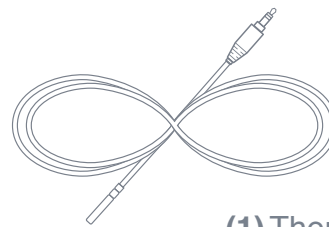
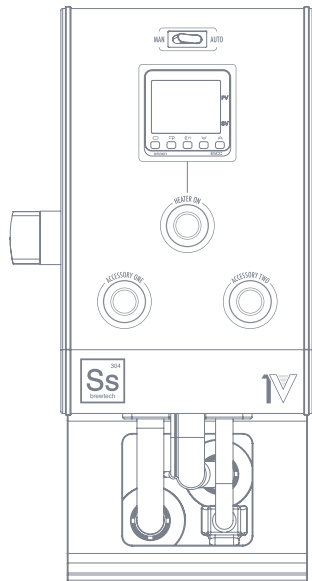


ENGINEERING BETTER BEER

eController Product Guide

eCONTROLLER 1V

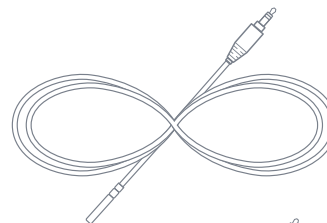
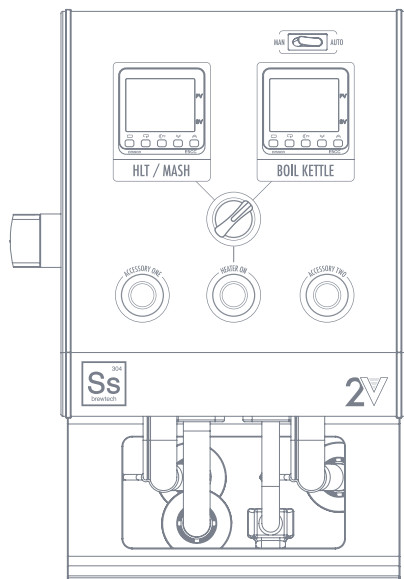
The eController 1V is designed to be used with a brew-in-a-bag system (BIAB), but can also be useful for someone who prefers modularity within their multi-vessel system. It can easily replace an existing gas-fired HLT or boil kettle in an existing 3 vessel brewing system. The 1V controller is designed to operate one element, and is compatible with our line of 10 and 20 gallon eKettles. A 30A dedicated GFCI protected circuit is required.



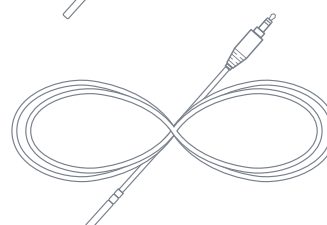
(1) Thermoprobe

eCONTROLLER 2V

The eController 2V is designed to be used as part of a 3 vessel, single infusion mash system. The controller pairs perfectly with our line of insulated InfuSsion Mash Tuns, alongside a pair of temperature controlled eKettles for the HLT (hot liquor tank) and boil kettle. The 2V controller can operate 2 elements in total, albeit one at a time, and is compatible with our line of 10 and 20 gallon eKettles. Since only one element can be operated at a time, the 2V controller retains the same 30A GFCI protected circuit power requirement as the 1V.



(2) Thermoprobes



INTRODUCTION

Designing every piece of our electric brewing equipment from scratch has enabled us to introduce a new level of process control, flexibility, and performance. Every detail has been carefully thought through and refined.

Every component of our new eControllers was designed to enhance the eBrewing experience. The custom extruded 6061 aircraft-grade aluminum housing is CNC machined, then coated in a durable black anodized finish. This approach allowed us to keep the system compact, portable and functional. The housing includes an integrated carry handle for easy setup and take down, a T-slot for alternative mounting options along with a heatsink to keep the internal electrical components cool.

The eController is driven by a PID controller, which doesn't rely on high speed switching to modulate heat. Voltage is modulated through an internal SSVR, which means element wattage will be directly proportional to the set point on the eController. A rocker switch located just above the PID controller allows the user to operate the controller in manual or automatic modes.

In manual mode, the proportional output can be fine-tuned on a scale of 0-100% of total element output, which is ideal for dialing in a perfect rolling boil. Alternatively, in automatic mode, the PID algorithm manages the proportional output relative to process temperature. To hold a steady HLT or mash temp for instance. The eController quickly finds equilibrium with environmental heat loss characteristics, and can maintain a high degree of accuracy during each brewing process.

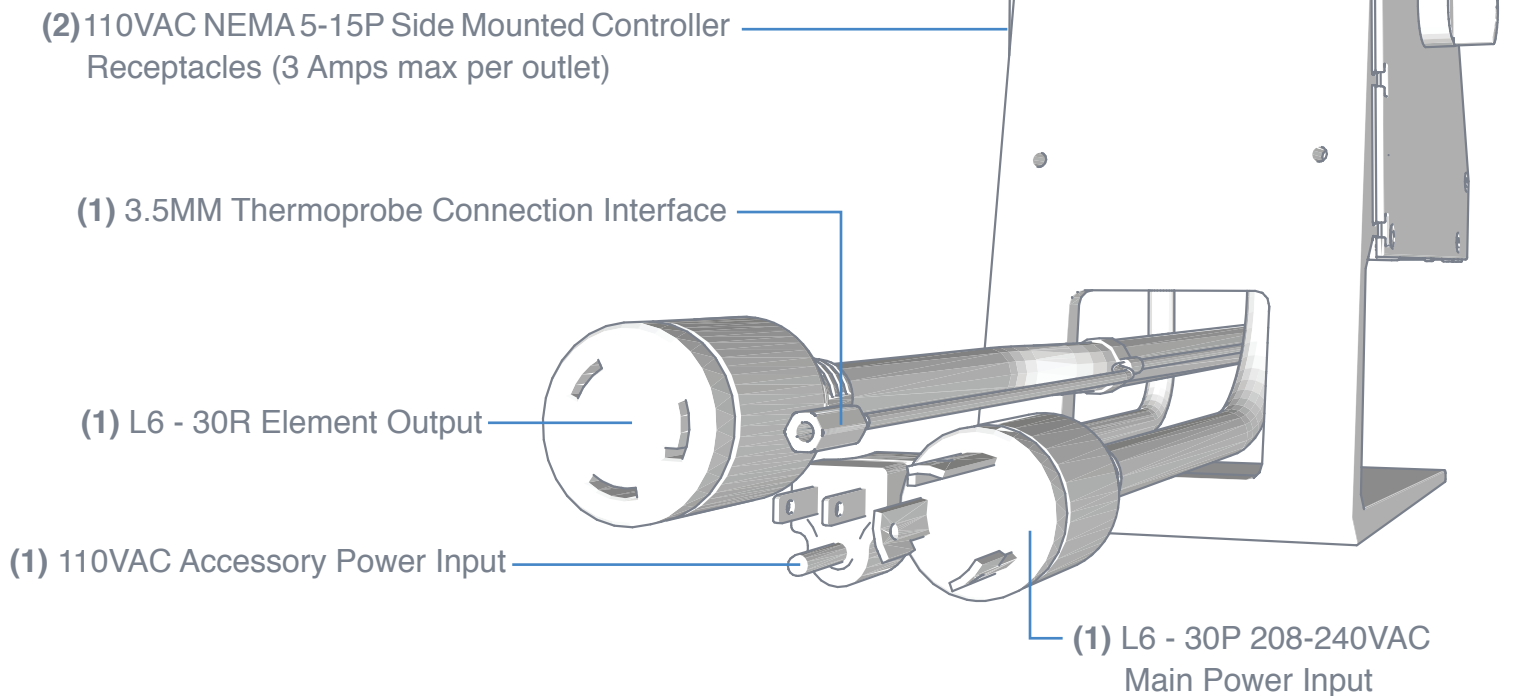
The heater button allows the user to turn the element on or off without having to shut off the main power or adjust the PID output setting. This is especially helpful if a boil-over occurs. This feature also allows the eController to be used to monitor a process temperature, such as during runoff or in the latter stages of the sparge process without the risk of dry firing the element. Lastly, the eController features two accessory outputs, which would commonly be used for pumps, but could also be used for lighting or even a phone charger.

Connectivity was an important consideration for our eControllers, we wanted the flexibility and familiarity of a plug that could be adapted to an existing customer supplied kettle or element, and the reliability of a UL approved connector type. For 240VAC main power and element connectors, we chose on the common NEMA L6-30 standard, which is a 3-wire twist-lock plug type, capable of carrying 30 amps of current. For the accessory connections, we settled on using a NEMA 5-15 standard, which is just a standard residential 120 VAC outlet. Finally, for the PT100 temperature probes we opted for the 3.5 mm mini jack connector standard, commonly used for headphones, which is both durable and easy to use.

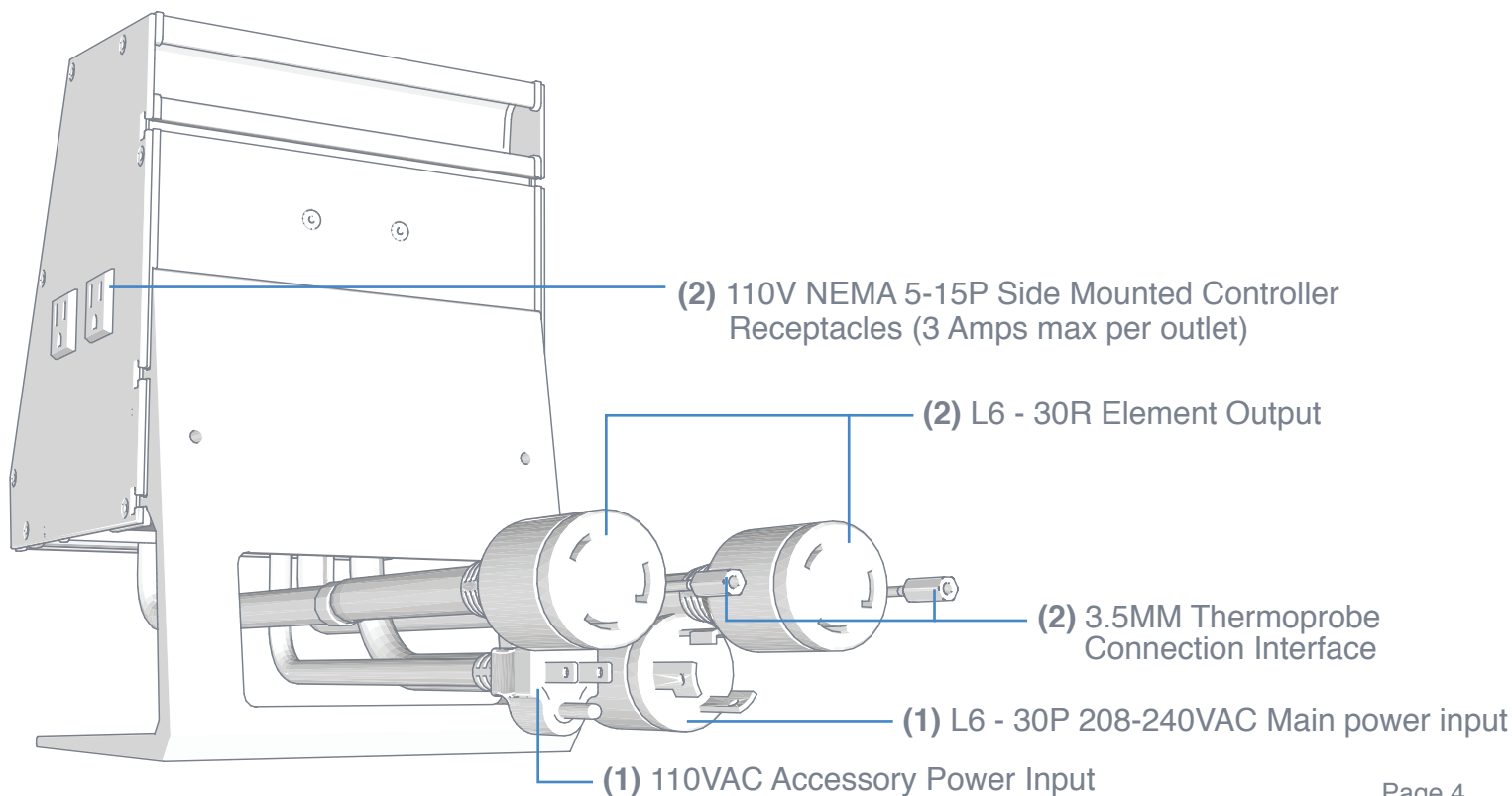
POWER SPECIFICATIONS

- 208-240VAC 60 Hz operation only
- 30A maximum total connected load
- Dedicated GFCI protected circuit required

1V eCONTROLLER CONNECTIONS

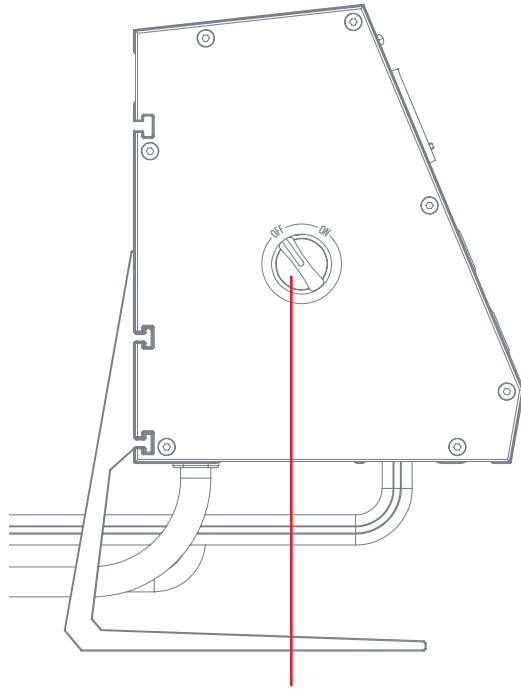


2V eCONTROLLER CONNECTIONS



WARNING

Before plugging in the controller, ensure that both the heater activation button as well as the side mounted on/off switch are not currently engaged. This will prevent accidental dry firing.



ACTIVATION BUTTON



Off Position

- Button is not recessed
- No indicator light



On Position

- Button is recessed
- Red indicator light

Side Mounted “ON/OFF” Switch in “OFF” Position

Always verify the element is fully submerged in water before activating the heater element. Dry firing the element will cause irreversible damage to the element coil and void the element’s warranty. Prolonged dry firing can cause damage to the vessel and other components, and can result in personal injury or property damage.

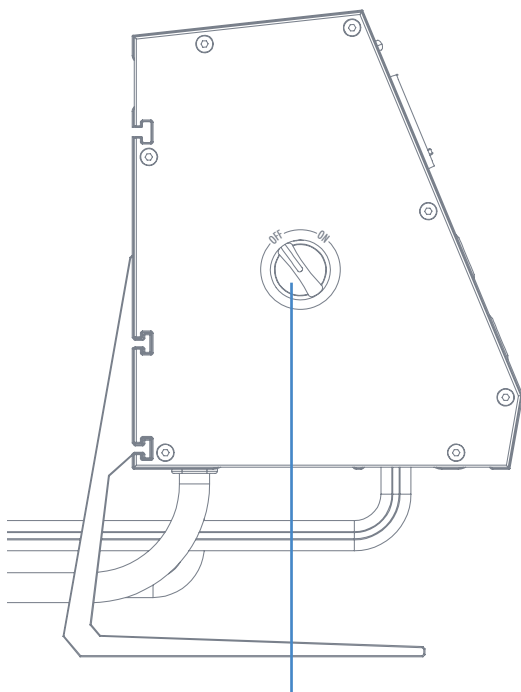
Make sure that the unit is connected to a dedicated GFCI circuit.

Wear proper PPE (Personal Protective Equipment) when using the equipment. This would include protective eyewear, gloves and apparel that would aid in prevention of scalding from boiling water.

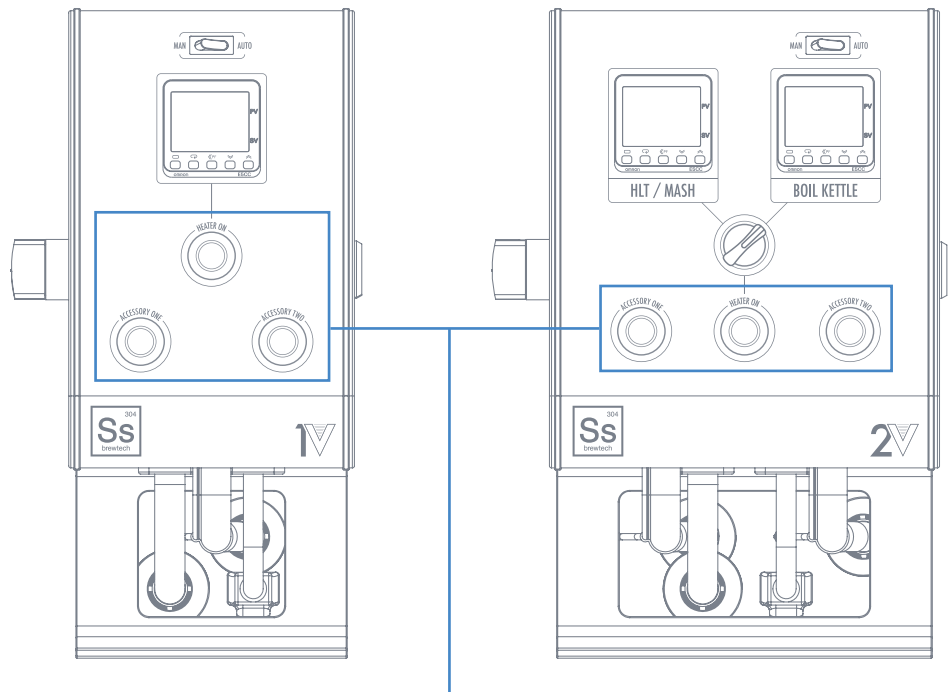
IMPORTANT

It is recommended to perform a “water brew” on the system before using real ingredients. This will allow you to familiarize yourself with the controller’s operation, processes, temperature ramp rates, and temperature losses during transfers. Record data and observations carefully so that you can calculate or adjust water volumes and temperatures based on recipe profile, ambient grain temperatures and any other outside variables.

eCONTROLLER ACTIVATION

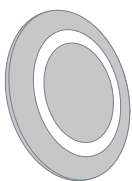


Side Mounted “ON/OFF” Switch



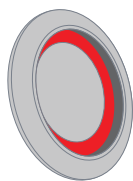
Heater and Accessory Activation Buttons

ACTIVATION BUTTONS



Off Position

- Button is not recessed
- No indicator light



Heater On Position

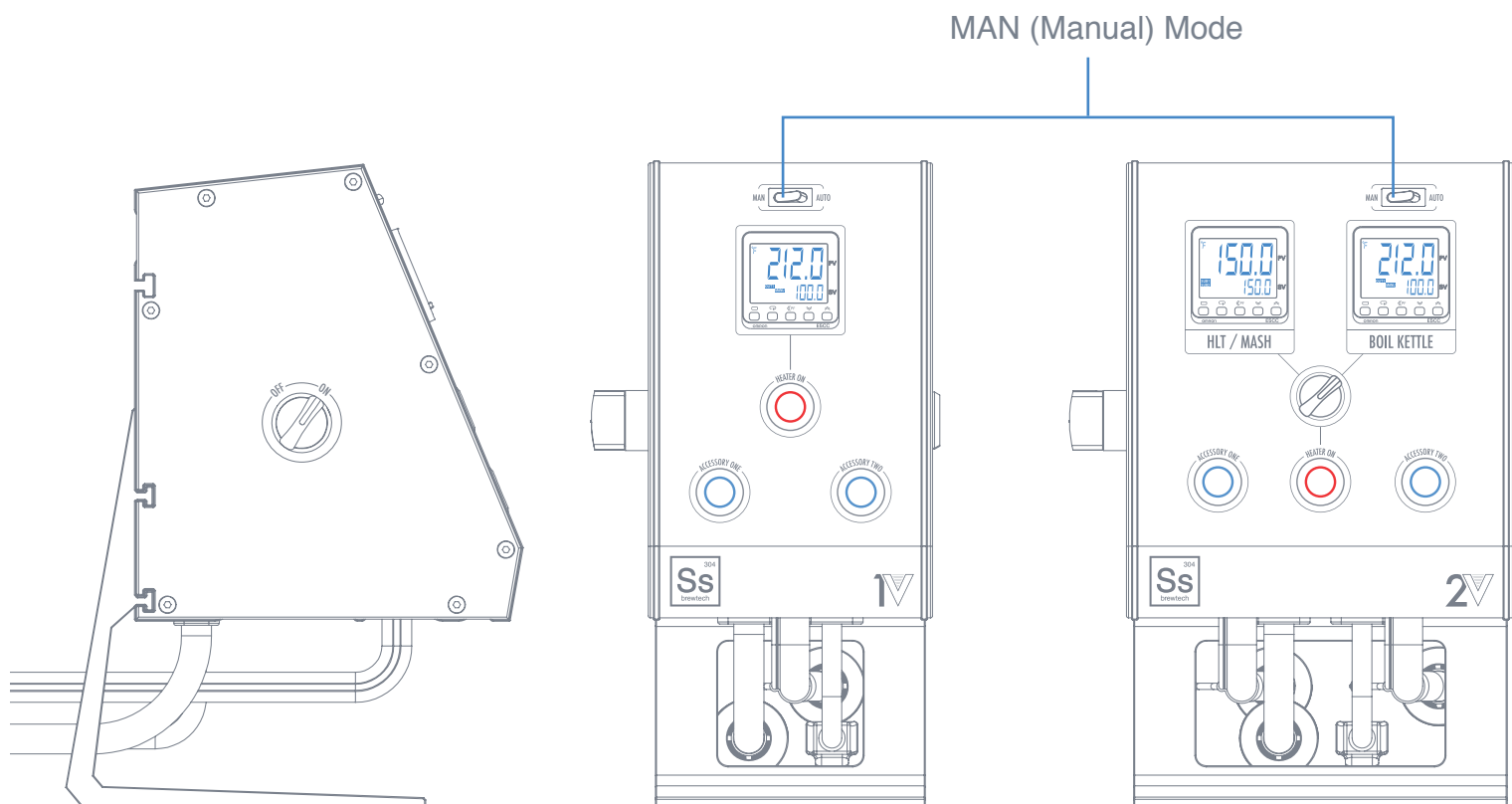
- Button is recessed
- Red indicator light



Accessory On Position

- Button is recessed
- Blue indicator light

After ensuring all the rear electrical connections have been made, the unit can be powered on via the side mounted “ON/OFF” switch. **Make sure that both the heater activation button as well as the accessory buttons are in the “OFF” position as shown in the graphic above.**



Once the side mounted “ON/OFF” switch is turned to the “ON” position, both controller adjustments and heater activation can begin.

At the top of the controller near the PID read out, there is a rocker switch for going in between “MAN” (Manual) or “AUTO” mode changes.

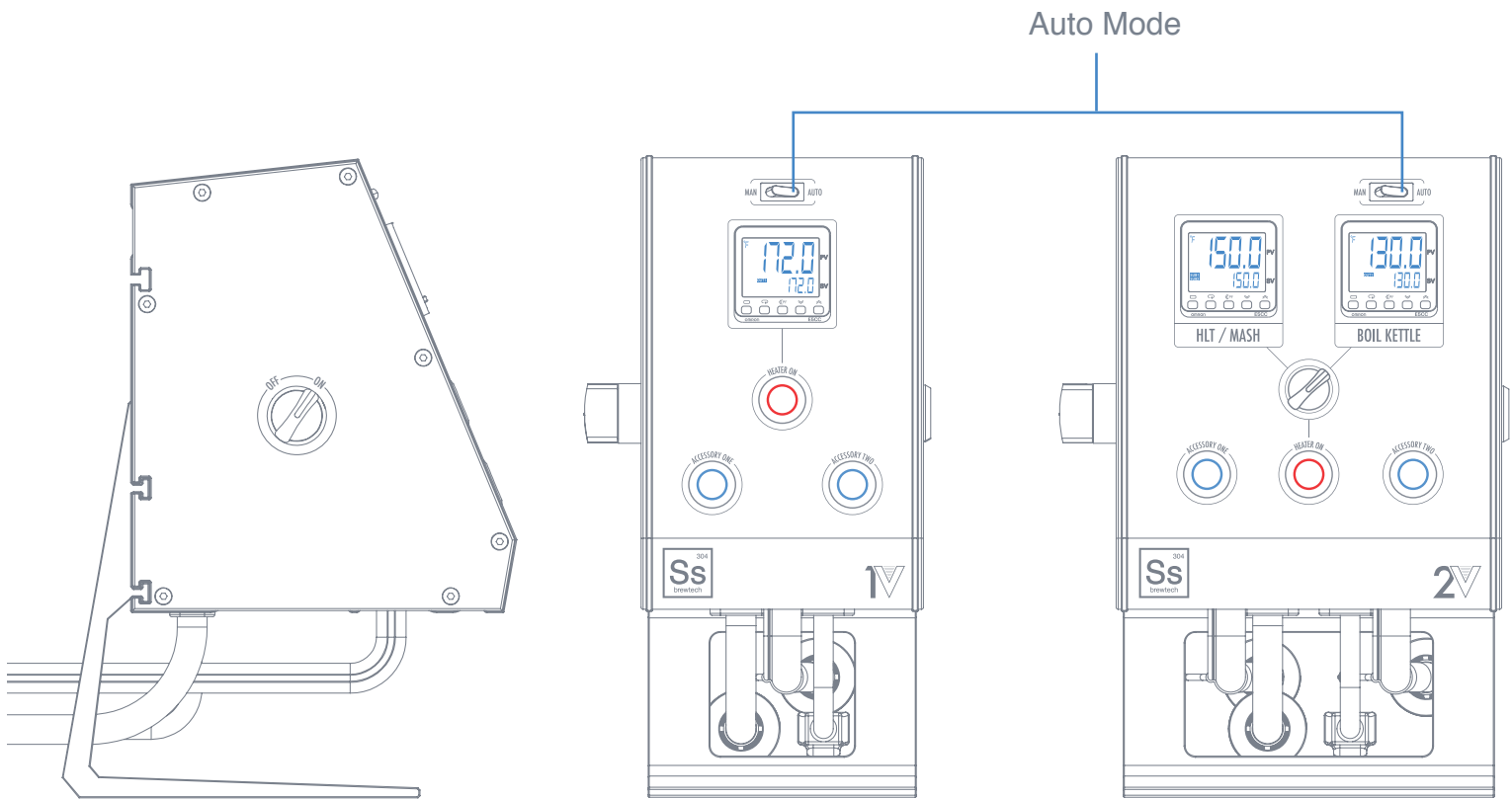
MANUAL MODE

The eKettle elements have been designed to support voltage modulation to fine tune the element wattage output. The benefit of this design is that it allows the user to dial in a perfect rolling boil by reducing element output instead of a more traditional on/off modulation. When the eController is in “MAN” mode, the set value on the temperature controller is indicative of the percentage of total wattage output for the element. For example, if the set value is at 100, that is 100% of element output, and if the set value is at 50, that means the power level is reduced to 50% of element output. Adjustment can be made from 0-100%.

Once you have the percentage dialed in, you can now activate the heater by depressing the heater activation button. The button will glow red to let you know the button has been depressed. Press down on the button again to deactivate power.

“MAN” mode is recommended for boil kettle operation.

Always verify the element is fully submerged in water before activating the heater element. Dry firing the element will cause irreversible damage to the element coil and void the element’s warranty.



AUTO MODE

When the eKettle is in “AUTO” mode, the temperature controller is set up to modulate element output based on a set temperature. This is used to maintain a specific temperature such as during a kettle souring process or for use as a HLT. For example, if 172 is entered into the set value, the controller will maintain the temperature of the liquid inside the kettle at 172 degrees Fahrenheit.

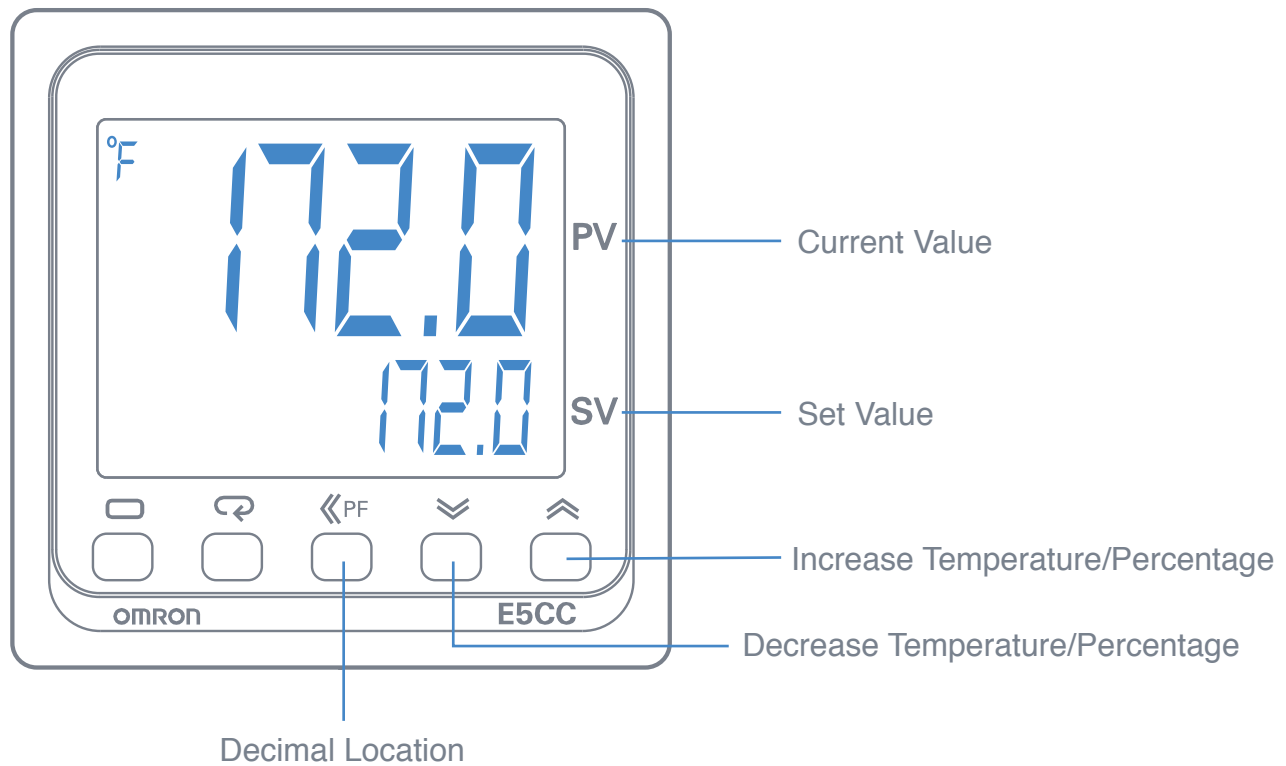
Once you have the temperature dialed in, you can now activate the heater by depressing the heater activation button. The button will glow red to let you know the button has been depressed. Press down on the button again to deactivate power. The element can also be shut down by adjusting the temperature below its setpoint in “AUTO” Mode.

Always verify the element is fully submerged in water before activating the heater element. Dry firing the element will cause irreversible damage to the element coil and void the element’s warranty.

CONTROLLER ADJUSTMENT

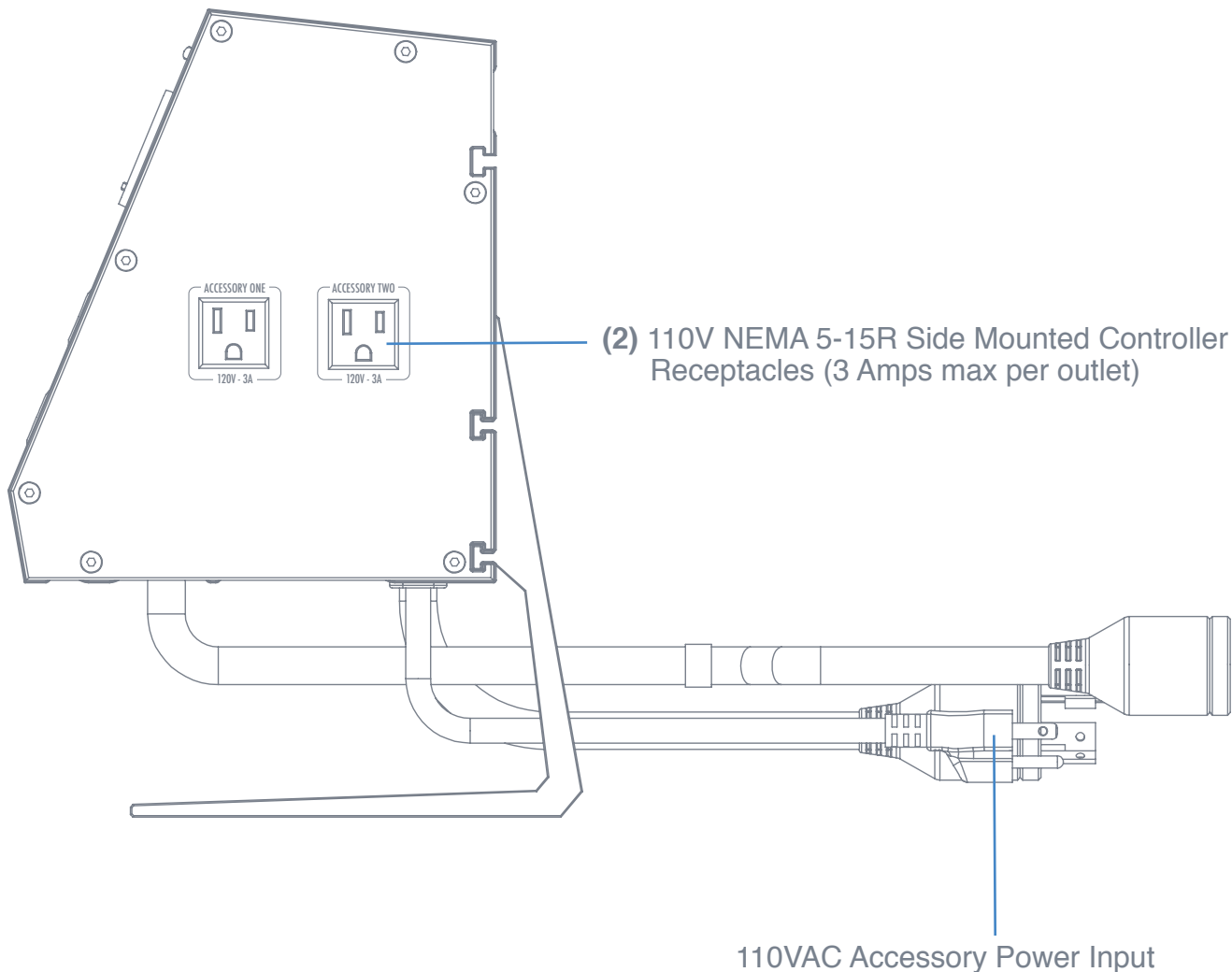
Temperature or percentage can easily be adjusted via the up and down arrows located on the controller.

You can also use the “<<PF” button to move over decimal places to make this process go a little quicker vs holding the up or down arrows.



SIDE MOUNTED 110VAC ACCESSORY OUTLET ACTIVATION

Included are **(2)** 110VAC NEMA 5-15R side-mounted receptacles (3A max per outlet) that can be used for a variety of accessories ranging from pumps to lighting.



The 110VAC plug coming from the rear of the eController must be connected to a power outlet in order for the two side-mounted receptacles to function. Once this connection has been made, both the “Accessory One” and “Accessory Two” buttons located on the front of the controller can activate the corresponding “Accessory One” and “Accessory Two” outlets. Activation is simply made by depressing the button. A blue glow will appear around the button to let you know that the accessory outlet is currently activated. Press and release the button once more to deactivate power.

2V OPTIONS

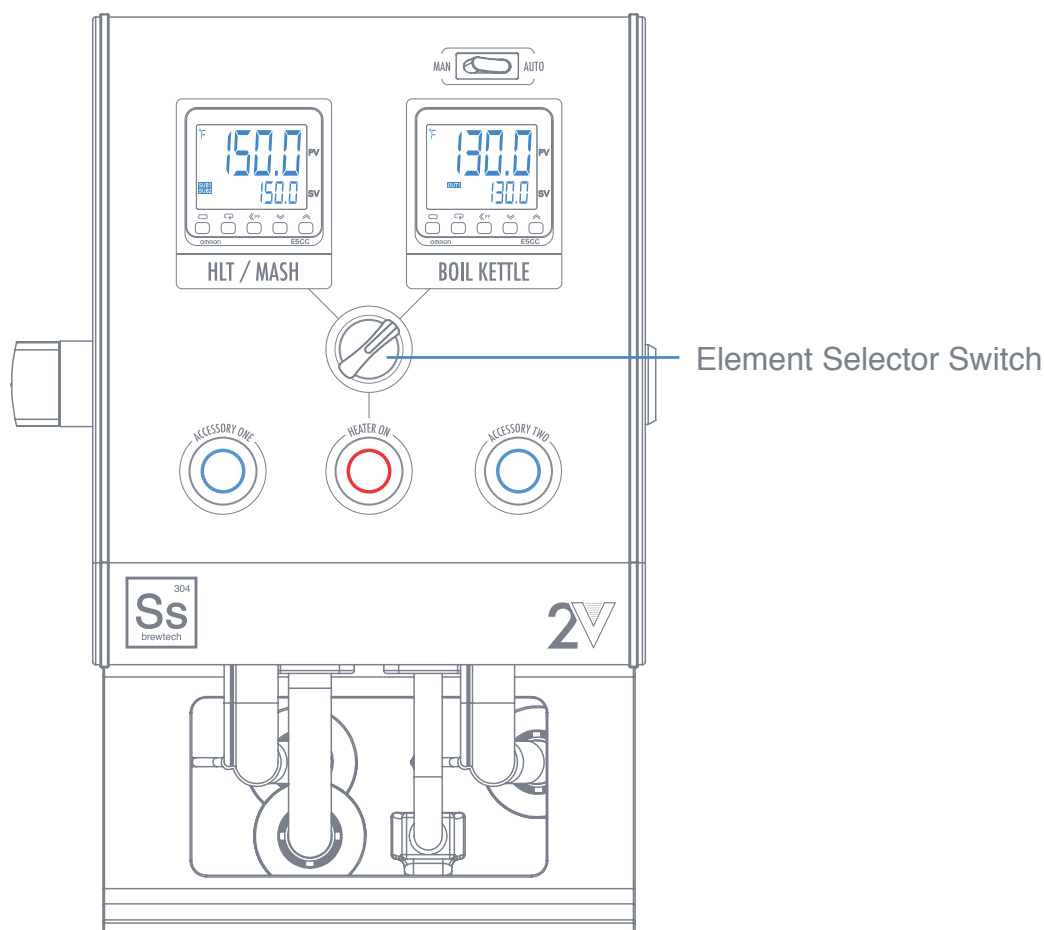
The 2V eController includes two PID controllers as well as an element selection switch. The two PID controllers are labeled as “HLT/MASH” and “BOIL KETTLE” on the face of the eController. The element selector switch’s function is to switch the power output to either the “HLT/MASH” element or “BOIL KETTLE” element.

Due to voltage and amperage requirements, only one element can be activated at a time on a 208VAC to 240VAC circuit.

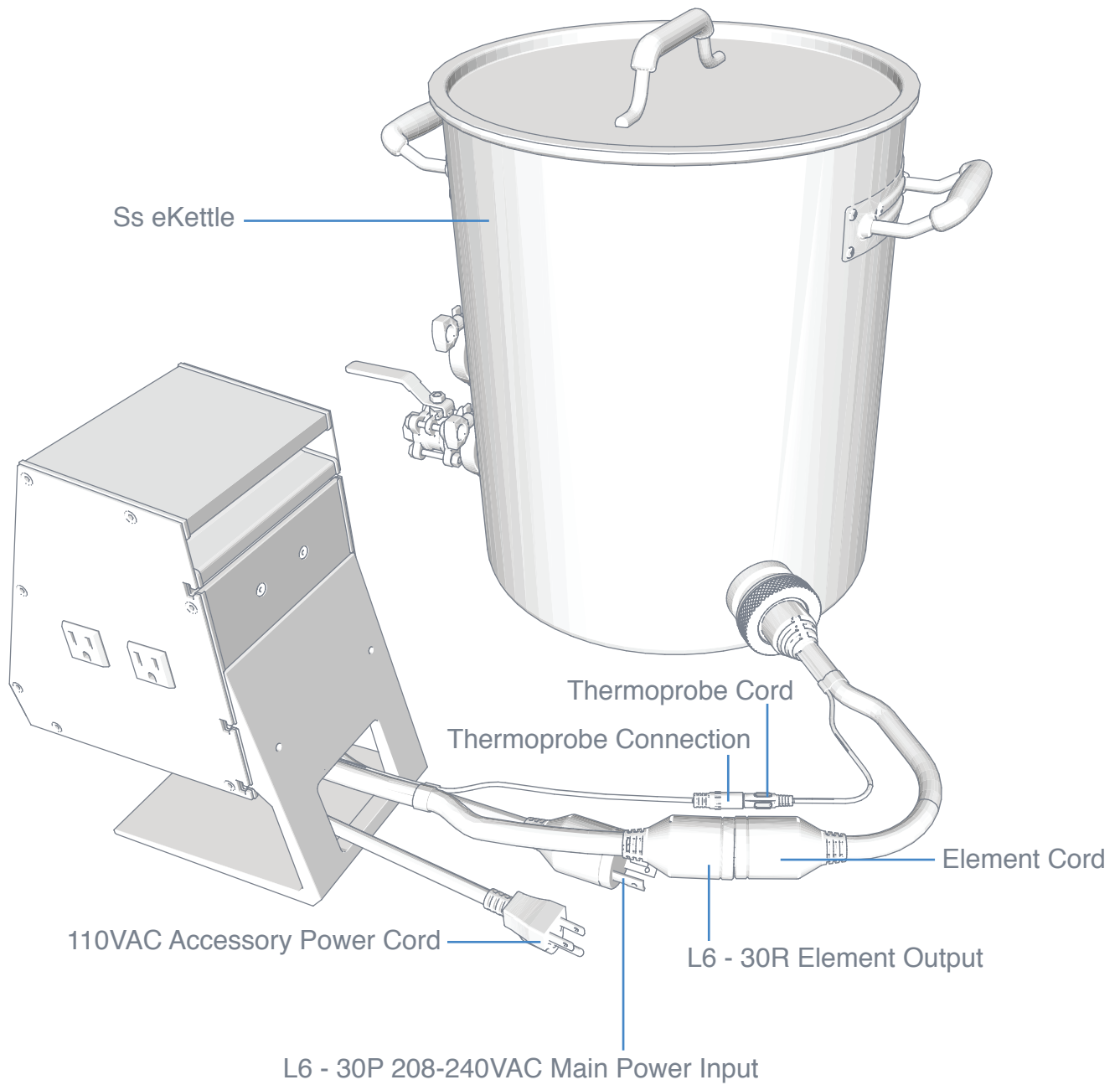
The procedure to adjust temperature and percentage on the eController 2V is identical to the eController 1V. The 2V does, however, include an element selector switch that allows you to select which element you want to activate. When using the eController 2V, be sure to pay close attention to which element you activate so that you do not accidentally dry fire an element that may not be completely submerged. Once the selector switch is in the desired position, the element can be turned on by depressing the “HEATER ON” button. To deactivate power, simply press and release the button once more.

Only the boil kettle portion of the 2V controller has voltage modulation to fine tune the element wattage output via the “MAN” or “AUTO” switch setup. This rocker switch is located above the controller read out marked “BOIL KETTLE”. The “HLT/MASH” controller only supports an auto PID tuning setting based on a set point since this is used to maintain to maintain a specific temperature for both a HLT and mash tun.

Always verify the element is fully submerged in water before activating the heater element. Dry firing the element will cause irreversible damage to the element coil and void the element’s warranty.



eBREWING 1V KIT



WARRANTY

Ss Brewtech provides a one year limited warranty to the original purchaser that our product(s) will be free from manufacturing defects in material and workmanship. The limited warranty covers only those defects and/or product failures that arise as a result of normal use, and does not cover any problems that originate from:

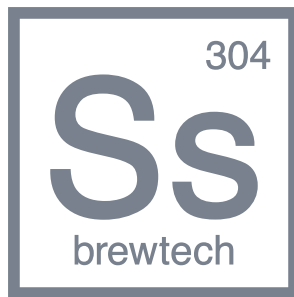
- Improper cleaning, care and maintenance
- Modifications made to a product
- Operation outside the product's published specifications
- Damage caused by incorrect assembly
- Exceeding recommended operational limits

Ss Brewtech reserves the right to request the original purchaser to return the defective item, at the purchaser's expense, before processing the warranty claim and issuing a replacement. If a direct replacement is no longer available, a product that serves the same purpose with equal or greater value shall be awarded. Ss Brewtech, at its discretion may also opt to simply refund the full purchase price in lieu of replacing the product.

The Ss Brewtech limited warranty is only applicable to customer-direct sales of home brewing equipment.

LIMITATIONS

Ss Brewtech makes no warranty of any nature beyond what is contained in this limited warranty. Ss Brewtech is not responsible for representations made about a product by another retailer.



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