

The BraZen\* Coffee Brewer introduces a revolutionary new vision in coffee brewing - where the user is actually in control of the brewing process.

## BETTER CONTROL through smarter technology

Everyday drip coffee makers, including most commercial versions, do not allow the customer to change the brewing temperature of their coffee. There were no consumer versions available with a pre-soak function, and almost all had poor extraction due to poor design of water dispersion.

The BraZen Brewer is redefining how drip coffee is brewed - in a word - properly!

<u>Calibration Feature</u>- We developed this feature to address the issue of component tolerances and drift. Nearly all electrical and electronic components start with varying degrees of accuracy. That accuracy can degrade over time, resulting in already loose component tolerances becoming even looser or drifting. Providing the customer with the ability to calibrate their Brewer at any time gives them the control to keep their Brewer accurate. The end result is tight temperature control over the life of the Brewer.

<u>Altitude Correction</u> - At sea level, water boils at  $212^{\circ}$ F (100°C). As you rise in altitude, that temperature drops significantly. Coffee brewed with boiling water at sea level is dramatically different compared to coffee brewed at 5000 ft where water boils at 202°F (94.4°C). To compensate for this (and for the first use in any brewing equipment) we have included a program feature within our calibration technology that mitigates and compensates for this change in the boiling point of water.

**Why is Calibration so Important?** To better appreciate the benefit of this technology, it is helpful to understand a basic principle of manufacturing. Tolerances are one particular aspect that constantly challenges manufacturers. Every piece of a product has a particular tolerance. For instance, the thermocouple used to sense the temperature of the brewing water may be off by  $2^{\circ}$ F, or approximately 1%. "That's not so bad" you may say, and you would be right, except there can be dozens of other components with their own range of tolerances – and these tolerances, or errors, can add up. The end result is that you can have ten units built consecutively from the same production line, using the same high quality parts and components and the result is a final product tolerance range of as much as +/- 4% or up a range of 16 degrees F. Currently one coffee maker viewed as the "gold standard" has a  $10^{\circ}$  F range. Another coffee maker touts as having fixed brewing temperature of  $205^{\circ}$ F....with a footnote indicating a full variance (or tolerance) of +/-4% or still the 'standard' 16 degree spread. In a game of horseshoes you'd be in the corn fields and laughed out of the game, yet these tolerances are deemed acceptable by others (partly because that was as good as anyone could do), but not our company.

With almost 4 years of dedicated research and development, being told at every turn that what we were demanding was simply not possible, we developed a means that is patent pending, by which the component tolerances are recognized, accepted and corrected for by an on-board calibration. The result is a Brewer that has shown a combined tolerance of as little as  $\frac{1}{2}$  to 1 percent in tests. This equates to as little as 1 degree on either side of the brewing temperature you choose for a total of 2°F in actual bench tests – FIVE TIMES better than the industry standard! Having this feature enables users to set the system at 204, 205, etc. and know they will be closer on target than any other system available in the consumer market.

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**Why is Temperature Control Important?**- Having control over the brew temperature enables the user (YOU) to decide at what temperature you would like your coffee brewed at. Different brewing temperatures will extract different flavors from your coffee and can greatly affect the character of the cup. No one brewing temperature is 'right' or perfect. Hotter is not always better. In simple terms; being able to choose the brewing temperature gives users more control over the flavor of the coffee in their cup.

**Full Saturation Water Dispersion Sprayhead:** Critical to proper extraction of all the character your coffee embodies in conjunction with water temperatures, is water dispersion. The Brazen system has been designed with a water dispersion spray head (see below) that provides even water distribution over all the grounds. This allows greater character in your cup without the all too familiar grounds basket "donut" (that dry ring of grounds around the edge of your basket) where areas of the grounds get little if any water.



**Extra Capacity "Cupcake aka straight sided" style Grounds Basket:** Seeking to provide an environment conducive to proper flavor extraction, the Brazen has a "cupcake" style grounds basket. The cupcake style lends itself to even extraction as is evidence by the fact that all commercial units utilize this style for better extraction. This is in contrast to what is used almost universally within the consumer market; a cone or "V" shaped style which was designed to over compensate for poor water dispersion. This style of basket leads to "donuts" and increases the likelihood both over and under extraction of the coffee leading to a bitter and sour cup respectively.



<u>What is the Pre-Soak Function?</u>- A pre-soak function is just that; a cycle where water is dispensed in a controlled fashion and allowed to saturate the coffee grounds, preparing them for a proper extraction. Current brew systems made for the consumer market merely dispense water as its function allows – spurts, drips and dribbles. In the process, you may get clumping and pockets of dry grounds producing under and over extracted coffee. Pre-soak allows water to permeate all the grounds so the water subsequently released for brewing flows evenly, producing a better, cleaner and often sweeter cup.

**Pre-Soak Sub Feature - Adjustable Rest Time** – This function allows the user to fine tune the length of time water rests on the grounds. The benefit here is that the pre-soak time can be adjusted according the age, origin and level of roast of the coffee. A very fresh coffee that has rested and degassed for a shorter period of time, tends to have a larger bloom, or swelling of the coffee grounds, when water is first introduced. A longer pre-soak time allows the bloom to subside and minimize the potential for the grounds to over flow the basket. Conversely an older coffee may not need as much time for the bloom to fall and be ready for the remaining brewing water.

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What is Temperature Glide and Overshoot? A common occurrence when heating water to a specific temperature is to 'overshoot' this point because the heaters are not turned off until the water is at temperature – unfortunately electric heaters continue to heat the water for some time after that. The idea of a glide is this; once your desired brewing temperature is set in the Brazen's memory, the Brewer is designed, using patent pending technology, to recognize this set point. Program settings reduce the power to the heaters so that they are almost off when the water is at the temperature you choose. By having the glide feature you minimize the likelihood of missing the brewing water temperature you set. A good analogy is to compare it to driving up to a "STOP" sign with the stop sign being the set point. If you are driving at 60 mph when you come to the stop sign, despite pressure on the brakes, the car WILL runs past the "STOP" sign into the intersection, and potentially into great peril. If you de-accelerate some distance before the "STOP" sign (as I am sure you do) your ability to stop exactly where you want becomes much greater. The same theory is applied to the glide feature. Our goal is to hit the set point versus racing past it.

<u>Why is the Manual Release Important?</u> It allows the user to control the water release and do so in accordance with their own needs or desires. It also allows the user to use the Brazen as a hot water kettle for teas. This can be achieved by removing the brew basket and placing any item, a French Press for instance, under the water dispersion screen to catch the released water for brewing other items.

<u>What Does the Timed Auto Brew Function Do?</u> This is your standard 'timed function' that many users are used to – the ability to set the coffee brewer up at night and have coffee waiting for you in the morning. It allows users to put coffee into the grounds basket and set a timer to start brewing at a predetermined time, much like your alarm clock. In this case, the two are likely to be coordinated so the user is awakened by their alarm and strolls into the kitchen to find coffee hot and ready for their morning 'fix'.

**Stainless Steel Reservoir:** Having a stainless steel reservoir for heating the water eliminates the possibility that plastic tastes can be imparted into water used for brewing. This prevents tainting the character of the coffee. Stainless steel also has clear advantages over aluminum or copper as it resists corrosion, which too can impart odd or bad flavors into the water and thus the coffee.

<u>How Does an Insulated Steel Carafe Help?</u> One of the problems we recognized in many of the current coffee makers was that of the hot plate to keep the coffee hot. The result – baked coffee, often no better than what a percolator would produce. The insulated steel carafe keeps the coffee hot longer than unheated glass carafes but does not adversely affect the flavor like a hot plate does.

\*Designed to meet or exceed SCAA Brew Standards- Behmor will apply for certification once the program restarts in Fall 2012