



## Brew Bomb X-45 Getting Started

Congratulations on your decision to purchase a Brew Bomb X45 Brewer. The Brewer is designed to provide a simple way to consistently craft commercial quantities of Cold Brew Coffee to precise cup standards. The construction of the Brewer incorporates food grade design and materials, including 304 Stainless Steel and food grade PE filters and water lines.

While the Brew Bomb simplifies the brewing process the precision drip technology delivers wide ranging versatility and control over the brewing variables thus allowing for uniquely crafted brews.

So, let's get to some brewing

### The Critical Elements are Degassing, Grind Size, Pre- Infusion, Water Flow and Time

#### Degassing

Degassing the beans for at least 3-7 days prior to brewing will result in a tastier and more consistent brew. Should you get in a pinch and need to use coffee shortly after roasting, grind the beans and let sit 12-18 hours.

#### Grind Size

Grind size will impact the cup profile, total extraction and brew times.

The brewing action of the Brew Bomb Brewer is water flowing through coffee grinds. A larger grind naturally lets water flow quickly and a fine grind slows the flow, or if too fine, can even stop the flow completely. Experimentation has shown that a smaller grind does increase the acidity, as referenced by flavor and a courser grind accentuates the deeper more traditional chocolate and caramel notes. The Brew Bomb provides intriguing versatility by accommodating layered grind sizes, whereby the courser grind is on the bottom and the finer grinds are layered on top.

Another key component is the consistency of the grind. If the coffee grinds are uniform in size, with minimal fines, then a smaller grind size will accommodate water flow and deliver a more consistent cup profile. If the grinding process creates irregular grinds with substantial fines then a larger grind size will be required. We highly recommend a high-quality grinder with sharp burrs be utilized in the grinding process.

#### Pre-Infusion

Coffee Grinds will absorb twice their weight in water causing the grinds to swell. This swelling can lead to the brewer plugging thus pre-infusing the grinds with water is necessary.

The pre-infuse formula is to mix 5 pounds of coffee with .5-.75 gallons of water prior to placing the grinds in the brew cylinder. The objective is to merely moisten the outside of the grinds so that the feel is similar to beach sand well away from the water's edge and down below the dried top layer. Moisten only... do not saturate

Keep track of how much pre-infusion water is used as this data will be input into the Brew Controller.

When placing the grinds in the brew cylinder and level but do no pack.

### Flow Rate and Nozzle Height

The ideal flow is balanced with the grind size and desired extraction. A faster flow rate equals a faster and more aggressive extraction thus having a substantial impact on the cup quality.

To accommodate a variety of brew profiles the Brew Bomb comes with 2 different nozzle assemblies, each of which has a specific operating flow range.

The flow range for each nozzle is as follows.

	<u>Imperial</u>	<u>Flow Range</u>	<u>Metric</u>
DBL-3	7-10 oz./min		140-170 ml/min
MPL 0.21	12-20 oz./min		185-225 ml/min

The maximum flow rate for each nozzle is dependent upon the water pressure at your brewing facility. With lower pressures the nozzle maximums will be lower than shown.

Nozzle height setting- An adjustable nozzle height maintains an efficient spray pattern thereby optimizing extraction. A spray pattern 1" inside the cylinder walls is recommended.

### Brewing Controller

The electronic controller assists the Brew Master by providing brew data. The basic elements of a brew cycle are.

Desired Yield- The amount of cold brew actually produced

Brew Time- The amount of time dedicated to completing a brew cycle

Flow Rate- The rate of water flow expressed in a per minute flow.

Coffee Quantity- The amount of coffee put in the cylinder

The controller has two control options, **Auto** and **Manual**.

The Auto function incorporates pre-infusion by adding grind water absorption into the calculations. Once the brew variables are input, and the Run screen is activated, the controller calculates and displays the following information.

Target Flow Rate/ Current Flow Rate

Target Brew Time/Elapsed Brew Time

Total Water to Dispense to achieve the desired yield/Current total water dispensed.

Extraction Ratio. This is the ratio between the Total Water Dispensed and Coffee Quantity.

The brew cycle is initiated by opening and closing the manual control valve. The valve should be adjusted so the actual flow rate is relatively close to the target rate as displayed by the controller. Note that the flow rate is subject to

pressure fluctuations in your facilities water system which will cause the actual flow rate to rise and fall accordingly. The goal of matching the current flow with the target flow is to merely get the values within a range. The Controller programming does accommodate this fluctuation by utilizing an averaging method as well as recalculating the target flow rate into a real-time value.

The controller has an audible alarm and auto shut-off. When the button displays ON this indicated the functions are currently active. Both functions are activated when the total dispense value is achieved. If either function is disabled by changing the value from On to Off then the user must press the On button twice. The 1<sup>st</sup> press will result in On in Blue letters. Press the button again, resulting in the letters turning black. This confirms the function is active. This is only required if the functions are disabled by pressing the buttons Off. If the controller is unplugged then the functions are reset to the default “active” state.

**The Manual Function** is used when the Brew Master knows the precise parameters that will be used, including total dispense, brew time and flow rate. The user can input any 2 variables and the controller will calculate the 3<sup>rd</sup> variable. This menu allows for the user to quickly input data and begin a brew.

Select the nozzle based on the specified flow rate.

## Brewing Considerations

The multiple variables inherent in all Coffee creates an environment where general guidelines are more appropriate than hard rules. Precursors including origin, processing methods and roast profiles impact how particular compounds extract thus some degree of experimentation is recommended. The following section provides guidelines that will immediately yield a tasty brew as well as a process for fine tuning which can pay big in a creating an extraordinary Cold Brew.

### **Origin and Roast Profile**

Origin, Processing Method and Roast Profile represent the foundation for the brewing process and being completely familiar with a bean's character is the place to start.

### **Basic recipe for success**

A basic formula for immediate success is as follows.

1. Select an origin free from cupping defects
2. Roast to a level that you are familiar with and have a good idea what the brew should taste like.
3. Use 30 lbs. of beans. Capacity is 40-45 pounds but we recommend starting conservative.
4. Grind to a typical pour over grind size.
  - a. Using the Mahlkonig VTA Grinder a 5-7 grind size will yield a decent cup and is good place to start. This represents a grind size of 200-350 microns.
5. Pre- infuse as instructed
6. Set up a 2.5-hour brew to yield 15 gallons of concentrate.
7. Monitor the brew TDS and cup quality in both the catch bin and the discharge tube. Stop the brew when either the grinds are completely extracted, as evidenced by a very low discharge tube TDS or an over extracted taste. Expect a TDS between 4.5 and 6.5. You may stop the brew before or after the brew cycle, as shown on the controller, is complete.
8. Add water until the TDS reaches your specification, typically 1.3 to 2.0
9. Total yield of ready to drink cold brew will be 43-48 gallons.
10. Log the results and adjust your next brew accordingly.

This method is a practical way to get started as the outcome will be a tasty brew. The key element is monitoring the brew and stopping the brew cycle before over extraction occurs. It is impossible to predict this point as some beans can extract all the way to a RTD TDS while other beans over extract quickly and take on a bitter and chalky taste. Once you have created your desired cup then simply duplicate the brew profile for consistent results.

### Experimenting and pushing the envelope

The Brew Bomb is the ultimate experimental platform as the ability to monitor the bin and output line simultaneously provides immediate feedback with regard to what is happening in the cup.

While absolute rules do not apply, you may find these general guidelines helpful.

#### Grind Size matters

1. A finer grind size makes the coffee livelier but can over extract easily.
2. A courser grind size emphasizes the deeper chocolate and caramel tones and can brew longer.

#### Layering Grind Sizes

1. Using grind layers is an effective way to achieve great cup quality.

#### Vary the brew time for different grind sizes

1. This can be achieved by adding finer grinds to the top of the grind bed at varying intervals. This can allow for extracting the flavors available in extremely fine grinds while avoiding the issue of over extraction.

#### Brew Time

1. Shorter brew times result in more aggressive extraction. There is some debate regarding ultra-fast brews and stopping at very high TDS numbers and then cutting with water to a final RTD TDS. The key to this method is to not add the over extracted bitters that inevitably come with over extraction.
2. Longer Brew times encourage a softer extraction and can result in extremely smooth non- bitter cup profiles.

#### Variable Water Temperatures

1. Hot pre- infusion with cold brewing.
2. Upstream chiller controlling water temperature.
3. Brewing in a Cold Room.

### The Brew Bomb Versatility -The Sky is the Limit.

The amazing thing about the Brew Bomb Community is how much we learn from you. The innovation and creativity being practiced by our customers keeps us on the leading edge with what is possible with cold brew cup profiles. We look forward to sharing in your innovation and constantly pushing the limit to creating the ultimate cold brew.

### System Components

The water management system has 5 components including a manual control valve, electronic controller, flow sensor, shut-off valve and precision spray nozzle. The flow is manually set by the user by manipulating the control valve. The electronic controller receives, analyzes and displays data from the flow sensor and controls the electronic shut off valve. Water is dispensed on top of the grinds through a spray nozzle which incorporates a height adjustment feature.

### Patents Pending

The Brew Bomb has been registered with Patents Pending..

## System Specifications

### **Brew Capacity- 5-60 Gallons**

The catch cart capacity is 50 gallons. If large brews to 60 gallons are desired 2 catch carts are required. The brewer utilizes the grinds as a filtering element. A minimum grind bed depth of 6" is required thus 5 Gallon Batches require the Small Batch Cylinder option.

### **Brew Times- 1 to 6 hours**

**Coffee Capacity- 40-45 lbs.** Dependent upon grind size.

**Footprint and Weight- 75 cm x 70 cm x 150 cm. 365 LBS**

**Water Requirement and Hookup- 50 PSI supply. ½" Male NPT Stub**

**Power Requirement- System is 12V powered by a 110V-240V wall transformer.**

## Contact Information:

The Brew Bomb is Manufactured and Sold By:

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## **Our Commitment:**

The only acceptable outcome for those who adapt our technology is a customer experience which exceeds all expectations. We are 100% committed to this outcome and guarantee our products, top to bottom..



Founder and Inventor of:  
The Brew Bomb