Basic Settings Guidelines

Pairing a coffee origin with quantity, yield, grind size and time is the key to crafting tasty Cold Brew. With precise control over all of these variables, the Ace Brewer delivers unparalleled craftability. The key is to understand how each variable impacts cup quality and yield.

Brewing to Concentrate- Brewing to a concentrated product yields better cup quality since this usually avoids the bitter and chalky notes that come with over extraction.

Coffee Weight-The brew cylinder capacity is 1.3 to 2 kg. Generally 1.6 to 2 kg will yield 19+ liters of ready to drink cold brew.

Concentrate Yield- Click on the calculator and select the yield ratio. The **Yield Ratio** is the ratio of coffee to concentrate with both variables being measure by weight. For fine grounds, use a ratio of 3 and for courser ground sizes, use a ratio of 4. The field will be automatically populated when you select the ratio from the calculator.

For those who want to understand the ratio here is the formula the calculator uses:

Coffee weight x Coffee Yield Ratio = Yield in Weight/weight of 1 liter=brew yield as concentrate

The Concentrate Yield is NOT the final ready to drink yield since the concentrate is diluted with water to achieve the final concentration. See Advanced Settings section.

Pre Infusion-Mixing in water with the grounds prior to brewing enhances the extraction process resulting in greater yield and adaptability to fine grind brewing. For fine ground brewing, use 11 ml/kg and for courser grounds use 20 ml/kg. For fine grind brewing the grounds should only be slightly moist on the outside, for courser grounds the mix can be much wetter but NEVER A SLURRY. If the grounds have standing water wait a few minutes for the water to absorb into the grounds. Improper pre infusion can result in the brew clogging.

Use the table below as a general guide for pairing yield ratio, grind size, expected concentration and pre infusion quantities.

****Coffee is a natural product that varies greatly thus use these criteria as basic guidelines only****

Coffee Yield Ratio	Grind Size	Concentration Measured in TDS	Pre-Infusion ml/kg
2.0	Fine	9.0 - 13.0	800
2.5	Fine	7.5 - 9.9	800
3.0	Fine	5.5 - 8.0	800
3.5	Medium	4.0 - 6.0	1050
4.0	Medium Course	3.0 - 4.5	1300

Advanced Settings Guidelines

Brewing to Concentrate-Diluting to Ready to Drink

With cup quality being a top priority, the Ace Brewer is designed to brew a concentrated product which is then diluted to a final Ready to Drink concentration. The Ace Brewer closely parallels the concepts of brewing on an espresso machine and diluting to an Americano. The following generally holds true.

Fine grind-more concentrated-less volume-shorter time

Courser grind- less concentrated, more volume-longer time

Use a Refractometer-We highly recommend using a refractometer to consistently control the concentration of your brew. Once a profile is developed the concentration will be fairly stable however during the development phase a refractometer is a key tool for objectively evaluating the results. The VST Brand Refractometer is by far the best instrument we have used.

Filling in the Advanced Fields

Concentrate Total Dissolved Solids-This refers to the expected TDS of the brew yield, which is a result of the ground size and yield ratio. The number in this field is only a target for the brew and not a recipe variable. The value in this field is used for the TDS dilution calculations although it can be over written with an actual measurement. Brew concentrations in the 3-12 TDS range are well within the potential of what the brewer can achieve. Typical concentrations for very fine grind brews, at a 1 to 3 ratio, the expected TDS is 7.0. For courser grind brews, at a 1 to 4 ratio, the expected TDS is 4.0.

Ready to Drink Total Dissolved Solids-This field refers to the concentration of the Ready to Drink product that will be crafted from this brew and is only used in the TDS dilution process at the end of the brew cycle. The value can be anything less than the concentration value.

Coffee Grinder Name-Input the grinding machine brand or name that will be used at both the test facility and at the location where the brew will be crafted. If you have not input the grinders used by your company you can add a grinder simply by clicking on the + sign and adding the grinder.

Coffee Grinder Setting-Define the setting that will be used on the grinding machine identified in the prior field.

Testing process- To dial in a brew, input the expected results for concentration given the grind setting and yield ratio. When the brew is complete record the cup quality and actual TDS and adjust your brew as necessary.

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Brew Intervals Guidelines

Brew Intervals-Brew intervals are periods of when the brewer is spraying water (brewing) or not spraying water (resting). The theory behind interval brewing is to separate extraction time from contact time. This separation allows for dissolving desirable compounds during rest periods and extracting during brew periods. By example, some acidity, fruits , florals and sweetness are only extractable with cold water over time. Continuous extraction however can over extract some less desired compounds. Brew intervals can be utilized to keep the grounds saturated, separated by rest intervals to dissolve desired compounds. When the desired compounds are adequately dissolved simply apply additional brew intervals to extract these desired compounds. The programming allows the user to totally customize the sequence and time for brewing and resting.

The interval brewing system tracks and accumulates 3 different times:

Brew Time- The total of all of the brewing intervals
Rest Time- The total of all the resting intervals
Total Time- The total of brewing and resting intervals which equals the total time it will take to execute the brew profile.

Refer to the Interval Section of the brew profile illustrated below.