Welcome to your new Brew Buddy! This entry-level single vessel brewing system is an affordable and easy way to get started with full grain beer brewing. The Brew Buddy uses the "Brew in a Bag" method. Grains are steeped in the full volume of water to be used for the brew, and no sparging is needed. But that is not all it can do! The Brew Buddy can also be used for brewing beers from extract and steeped grains, as well as for the more traditional mash-and-sparge method. Should you decide to move on to a more advanced brewing set-up, the Brew Buddy can easily be made part of any traditional three-vessel system.

This manual will tell you how your Brew Buddy works and how to use it. However, teaching you all the details of full grain brewing is beyond the scope of this text. Some familiarity with the basics of full grain brewing and access to a good book on home brewing is assumed.

Note: the photos used in this manual are for illustration purposes only. Because we continue to update and improve our products, the actual product supplied may differ slightly from the images shown.

Brew Buddy Components and Specifications
Your Brew Buddy can be used for batches of about 15 litres, depending on the recipe, desired gravity of the wort and length of the boil.

The Brew Buddy consists of the following parts:

- 25 litre food grade plastic brewing bucket with food grade plastic tap;
- 30 x 45 cm food grade nylon mesh liner;
- 230V / 2300W heating element with over-temperature protection;
- 65cm regulation kettle cord with 3 prong South African plug;
- Copper immersion chiller with 5-turn coil (ca. 6 x 26cm), 3/8" tubing, fitted with 1/2" BSP threaded connectors that match standard domestic plumbing accessories including "Gardena® type" hosepipe adaptors;
- This manual.
You will also need the following (not included with the Brew Buddy):

- An extension cord
- A thermometer
- A long-handled spoon or paddle
- A measuring jug
- A large colander (optional)

**WARNING**

A volume of boiling water may represent a health and safety hazard to your and those around you, as does the combination of water and electricity. Make sure that the Brew Buddy cannot be knocked over accidentally, and that no-one can trip over the power cord and/or extension cord(s). Ensure that no water can splash on plugs and/or electrical outlets. Use properly grounded plug points and extension cords that are fed from a distribution board fitted with an earth leakage protection switch. Consult with a qualified electrician when in doubt.

**Preparation**

Before first use, clean both the brewing bucket and the bag with a mild dishwashing detergent. Mix some dishwashing liquid in hot water and soak the mesh liner bag in it for a minute or two, then rinse thoroughly by immersing in clean water. Make sure all traces of dishwashing liquid are gone from both the bucket and the bag. Do not wring or twist the bag; simply hanging it from the drawstring is the best way to dry it. It will dry quickly. Once the Brew Buddy is clean, place it on a stable surface. Do not yet plug in the power cord. Tip: if the copper immersion chiller shows heavy oxidation, the easiest way to remove it is to place the chiller in a tub of water and vinegar until the copper is clean. Do not use strong acids, caustic soda or other harsh chemicals on any part of your Brew Buddy.

**Brewing Your First Beer**

Brewing beer with the Brew Buddy is fairly straightforward. Fill the Brew Buddy with water, heat it up, insert the mesh liner bag, add your grains, let them mash, remove the bag, boil the wort while adding hops, chill the wort and transfer to the fermenter. An example recipe is included below to get you started. Meanwhile, let's look at the process step by step.
Step 1
The first step in brewing with the Brew Buddy is to work out the volume of brewing water needed. This is easier than it looks. As a starting point consider the following rules of thumb:

- The brewing grains will typically displace about 0.65-0.7 litres per kg (i.e. the water level will rise by this much when you add the grains so you need to leave room in the Brew Buddy for that);
- The brewing grains will absorb about 0.8 - 1 litre of water per kg when you take them out;
- About 4 litres of water will evaporate during a 60 minute boil (depending on temperature, humidity and altitude);
- About 0.5 to 1 litre of green wort will typically be lost in the trub after the boil.

For example, let’s say you brew a beer that requires 4kg of grain and a 60 minute boil. The 4kg of grain will displace 4 x 0.65-0.7 litres, which means that you need to leave 2.6 to 2.8 litres of space for the water level to rise when you add the grains. With the Brew Buddy holding 25 litres including the grains, that means that your starting volume of brewing water is 22.2 to 22.4 litres.

The grains will absorb 4 to 4.4 litres, but this is offset by the water displacement that occurred when they were added. This means that once the grains have been removed you are left with 20.6 to 21 litres of green wort. Let’s say that 4 litres will evaporate in the boil, and another 0.5 to 1 litre will be lost in the trub after the boil. This leaves just over 15 litres to be transferred to fermenter once the boil is complete.

(Note that these are general figures. The actual values will depend on many factors, including the recipe, the batch size, how the grains have been crushed, etc.)

Step 2
Fill the Brew Buddy with the required amount of water, based on the volume of beer desired, the amount of grain used, and the length of the boil. Calculating this exactly is not easy, but after one or two brews you will have a fair idea of what to expect, especially when you make proper notes during your brew to record the details.

Once the water has been added, plug in the power cord, switch on, and heat the water up to the required temperature, depending on the recipe. Once the desired water temperature has been reached, switch off the power and unplug the power cord.

The grain will cool down the water when you add it, so your initial temperature should be higher than the required mash temperature. How much the grain will cool down the water can in theory be calculated (through various formula’s) but other factors also play a role, which makes the result somewhat variable. A better way is to use two litres or so less water than you need, and keep a kettle of...
boiling water and a jug of cold water handy. If your mash temperature is a bit too high after adding the grains, add cold water. If it is too high, add hot water.

**Step 3**
Insert the mesh liner, using a spoon or brewing paddle to smooth out the fabric against the wall and bottom of the Brew Buddy.

![Inserting the mesh liner](image)

**Step 4**
Once the mesh liner is in place, add the grains. Stir, and measure the temperature of the mash. If it is too low or too high, simply top up with some hot or cold water from a kettle or jug. Place the lid loosely on the Brew Buddy and let stand for the required duration of the mash (usually 60 minutes). Stirring the mash every 15 minutes or so helps increase the conversion and extraction efficiency. Wrapping the Brew Buddy in an old blanket or something similar will help maintain the mash temperature on cold brewing days. **Important: never switch on the heating element when the bag is inside the Brew Buddy!** The temperature will drop somewhat during the typical mash duration, but because the bulk of the saccharification takes place early in the mashing process, this is usually not a problem.

![Adding grains and wrapping](image)
Once the mashing process is complete, lift the grain bag out of the water and let it drain. Squeezing the bag is not recommended, as it puts a lot of strain on the fabric of the bag, may produce a cloudier beer and in the end does not contribute enough to the wort volume or gravity to matter. Tip: placing the bag in a colander over a pot is a good way to let it drain (pour the drained liquid back into the Brew Buddy).

Step 5
Plug the power cord back into the socket attached to the Brew Buddy's heating element and switch on the power. Wait for the wort to come to the boil. Once boiling point has been reached add hops as per the recipe's schedule. Watch out for boilovers; especially early in the boil when the wort is still foamy, this can happen quickly and easily. Boil without the lid on, as unwanted volatile compounds from the wort must be allowed to evaporate. The use of Irish Moss or a Whirlfloc tablet about 10 minutes before the end of the boil is highly recommended to help solids in the wort settle to the bottom prior to transferring the wort to the fermenter.

Note: the heating element is fitted with an over-temperature protection. Depending on the gravity and cloudiness of the wort it is possible that the over-temperature switch will engage now and then, switching off the heating element. While this does cause the wort to come off the boil, this will have no discernible effect on the quality of the beer.
Step 6
Once the boil is complete, switch off the power and unplug the power cord. Insert the immersion chiller into the wort. Do not yet run water through it, so that the heat of the wort has a chance to sterilize the immersion chiller. Also insert your spoon or paddle at this time, so that it will be heat-sterilized. Note: once the cooling process has started, all contact between unsterilized objects and the wort must be avoided.

Connect your water hosepipes to the immersion chiller and start the water flow. Note that the water coming out of the chiller will initially be very hot. The wort will now begin to cool down. Stirring the wort gently without splashing will speed up the cooling process significantly. The end temperature of the wort will depend on the ambient temperature and the temperature of the cooling water.

Once the cooling process is complete, remove the immersion chiller from the wort, but leave the spoon or paddle in. Stir the wort, using a rapid but regular circular motion, to create a "whirlpool". This will help to collect the solids in a "trub cone" in the middle of the bottom and away from the tap.

Remove the paddle or spoon, put the lid on loosely to help prevent wort contamination, and let the wort settle for a few minutes. Then open the tap and run the wort into a sterilized fermenter. Tip: the first 100ml or so of wort can contain a lot of solids that have collected inside the tap during the brewing process, so you might want to capture this into a cup or jug before transferring the clean remainder of wort into the fermenter.

Step 7
Clean your Brew Buddy as soon as possible. The longer you let it sit, the harder it will be to get it clean. Remove the spent grains from the mesh liner bag. (Tip: they make excellent chicken food, cattle fodder or compost starter.) Rinse the mesh liner bag under running water or by submerging it into a bucket or tub. Turning it inside out will make it easier to remove the last bits and husks from the fabric. Do not twist or wring the fabric; simply hang to dry. Use a soft scouring pad to clean the heating element. (Tip: should you have hard-to-remove, burnt residue on the heating element, use oven cleaner.) Rinse the Brew Buddy thoroughly, let dry completely, and store it in a clean, dry place until your next brew day.
Example Recipe: South African Blonde Ale

This beer is easy to brew, even easier to drink, and is a good way to get started with your first full grain brew. Known as "a craft beer with training wheels" it is very well suited to practice your home brewing skills on, and great way to introduce craft beer to those who will only drink their favourite brand of industrial lager.

Estimated vital statistics:
- Batch size (going into fermenter): 16 litres
- Original gravity: 1.050
- Final gravity: 1.013
- Colour: 7 SRM
- Bitterness: 21 IBU
- Alcohol by volume: 4.9%

Grain bill:
- Pale Malt: 4.25kg
- Light crystal malt (e.g. CaraHell, 8-12L): 200g
- Medium crystal malt (e.g. CaraMunich type III, 53-60L): 150g

Hop schedule:
- 15g Southern Promise (9.5-11% AA (bittering)) Boil for 60 minutes
- 5g Southern Promise 9.5-11% AA (flavouring) Boil for 5 minutes

Adjuncts:
- 1 tsp Irish Moss Boil for 10 minutes

Yeast:
- Fermentis US-05 1 packet

Mash and boil schedule:
Single infusion mash at 66 degrees Celsius for 60 minutes, followed by a 60 minute boil.

Method:

1. Fill the Brew Buddy with 20 litres of water and heat to about 70 degrees Celsius. Boil a 2 litre kettle of water and fill a jug with 2 litres of cold water and keep both on hand.

2. Switch off the power once the water has reached the desired temperature and unplug the power cord. Place the mesh liner bag in the Brew Buddy and add the crushed grains. Stir for a minute, then check the temperature. If the temperature is below 67 degrees Celsius top up with hot water, otherwise top up with cold water, adding about 2 litres up to a total volume of 25 litres.

3. Place the lid loosely on the Brew Buddy and let stand for about 60 minutes. Optionally cover it with a blanket or similar cover on cold days to help maintain mash temperature. Stir the mash every 15 minutes or so.
4. Lift the mesh liner bag with the grains from the wort and let drain, optionally using a colander. Squeezing is not recommended.

5. Plug in the power cord and switch on the power. Wait for the wort to come to the boil. Once the wort boils add the bittering hops and continue boiling for 50 minutes. Add the Irish Moss after boiling for 50 minutes and continue to boil for 5 minutes, then (55 minutes into the boil) add the flavouring hops and boil for another 5 minutes. Then (i.e. after a total boil time of 60 minutes) switch off the power and unplug the power cord.

6. Insert the chiller coil and spoon or paddle, and let it stand for a minute or two. Then connect the hosepipes and start the water flow. Stir to speed up the cooling process. Once the wort has cooled down to fermentation temperature (18-24 degrees C) turn off the water and remove the chiller coil but leave the spoon. Stir the wort in a regular, circular motion to create a "whirlpool". Remove the spoon or paddle, place the lid loosely onto the Brew Buddy and let the wort settle for about 5 minutes.

7. Open the tap to run the wort into a cleaned and sterilized fermenter. Pitch yeast and continue fermentation as usual.

Frequently Asked Questions

Q: What is the Brew-in-a-Bag method?
A: Brew-in-a-Bag (commonly known as BIAB) is a relatively new full grain brewing concept that is taking the home brewing world by storm. The idea is that the crushed grains are contained in a mesh bag and mashed in the boiling kettle rather than in a separate mash tun. Mashing the grains in the full volume of water to be used for the brew eliminates the need for sparging. The advantages of this method include a good efficiency (i.e. a good extraction of sugars from the grains); less time required for the entire brew and clean-up, and simplicity. There are a few disadvantages as well: compared to a traditional multi-vessel brewing set-up, the BIAB method produces a cloudier wort; water quality is more critical; the finishing gravity of the beer tends to be a little higher at similar mash temperatures, and because everything has to fit within a single bucket the batch size is a bit smaller.

Q: On the Internet I see a lot of conflicting information on the Brew-in-a-Bag method. Why is this?
A: Because this is a relatively new concept that is different from traditional brewing methods, the initial understanding of how the different brewing method affects the mashing and fermentation process was far from complete. Many aspects of BIAB have been hotly debated, and a lot of progress has been made since then, causing most statements found in earlier literature now to be considered obsolete. For example, it was once thought that the effect of the amount of water used during mashing significantly affected the quality of the beer. BIAB brewers have since proven that this is incorrect.
Q: *How can the Brew Buddy be used for extract brewing?*
A: Brewing beer from malt extracts and steeped grains involves making a wort from dry or liquid malt extracts in water, in which grains are then steeped, usually contained in a grain bag, before the wort is boiled with hops and then cooled. The Brew Buddy can do all of this! Simply add water and malt extracts to the Brew Buddy, use the mesh liner as your grain steeping bag, and then boil the wort as usual.

Q: *How can the Brew Buddy be used for the traditional mash-and-sparge method?*
A: Instead of mashing the grains in the full volume of water, use the regular grist-to-water ratio (about 2.75 liters of water per kilogram of grains). This will give you a thick, compact grain bed in the mesh liner bag. Do not stir after mashing in. Once the mash is complete, lift the bag up until the grain bed is suspended over the wort (optionally using a colander). Then run hot sparging water (ca. 70 degrees C) through the grain bed using a jug or kettle, until the full wort volume has been extracted from the grains. Then proceed with the boil as usual.

Q: *Why does the BIAB method tend to result in slightly higher finishing gravities?*
A: In the traditional mash-and-sparge method the grain bed is rather compact, which causes the grains to warm up relatively slowly. In the larger water volume used when you Brew-in-a-Bag all grains are fully exposed to the water, which immediately raises them to the end temperature. Higher mash temperatures produces more unfermentable sugars (mainly dextrins). But there is an easy way around this: simply mash at a temperature one or two degrees lower than used with traditional mashing.

Q: *Why is water quality more critical when you Brew-in-a-Bag?*
A: In traditional mash-and-sparge method the grains are steeped in a much smaller volume of water that is used with the BIAB method. The acidity of the brewing grains counteracts the usually alkaline character of the water, which is important for a good mash. With the much larger water volume used when you Brew-in-a-Bag this effect is much diminished. Using water of appropriate alkalinity is recommended, especially for brewing lighter beer styles.

Q: *Why does the Brew-in-a-Bag method create a cloudy wort?*
A: In the traditional mash-and-sparge method the grain bed is compacted, which makes it an excellent filter medium to help strain small particles out of the wort. The very thin mash used to Brew-in-a-Bag does not provide this filtering effect. However, cloudy wort does not mean cloudy beer! Simply use some Irish Moss in the boil and add beer finings to the fermenter once the fermentation is complete, and your beer will be clear.

Q: *What about all these different BIAB calculators on the Internet?*
A: There are indeed many different calculators available. Unfortunately they all appear to work on the basis of different assumptions, which stems from the fact that BIAB is subject to a variety of factors. Because BIAB is still fairly new, the different calculator programs have not really "matured" yet, and especially when it comes to the conversion between metric and US units they still come up with many erroneous results. While this is likely to sort itself out over time, for the moment it is probably best to steer clear of them unless you are sure they will give you the correct results. No information is better than incorrect information, and after a few brews you will have a good "feel" of how your Brew Buddy works and how it performs when it comes to grain bills, water volumes and temperatures.

* * *

Sole supplier in South Africa: Brew For Africa (Pty) Ltd

www.brewforafrica.co.za

V1.1