Guten Nanobrewery Instruction Manual

1. Introduction

The Keg-King Guten Nanobrewery is the single-vessel system for all-grain brewing. Built with quality and ergonomics in mind, the Keg-King Guten Nanobrewery allows for easy brewing, making it the perfect system for entry-level brewers. With a growing online community and excellent customer support based in Australia, our mission is to help brewers achieve the best results and have fun with their brewing journey.

Whether you're an extract brewer or a commercial brewer, it is possible to brew any style of craft beer at your own personal leisure with your Guten. This instruction manual will walk you through how to use your Nanobrewery so that you, the brewer, can cruise through your brew days.

2. Safety Instructions

As fun as homebrewing is, it presents certain hazards to the environment due to the presence of hot liquids, electricity, heavy lifting and the use of cleaning agents. It is important to brew in clean, safe conditions, maintain your brewery equipment and store chemicals properly.

- Make sure that your Nanobrewery is sitting on a flat, horizontal surface during operation.
- Ensure that the pump is turned off and that the ball valve is connected to the kettle body tightly and in the closed position (handle is perpendicular to the outlet) before filling.
- Always brew in a well-ventilated area with drainage zones.
- Keep away from children and pets during operation.

For your own safety, please read the instructions carefully and keep this manual for future reference. This is an electronic device so handle with care.

- If the power cord is damaged, do not use the main vessel. Call a licensed technician to replace the power cord.
- Do not connect any power adaptors to the main vessel as they can be potentially damaged by high wattage.

dry may cause damage to its internal components.

- Check your power supply before plugging in the power cord (10A for 40L and 15A for 50L). Failure to do so may lead to overloading which can damage the wiring on your Nanobrewery.
- If you are using an extension cord with your Nanobrewery, ensure no other products are connected to the extension cord.
- Do not wet the outside of your Guten when it is switched on. Doing so will introduce moisture and potential damage to the display panel and switches.
- Make sure that there is water inside the Guten before heating or turning on the pump. Running the Nanobrewery
- Make sure that the Nanobrewery is turned off and unplugged if you are cleaning and rinsing the exterior surfaces.

3. Parts List

Brew Vessel

This is the very heart and soul of the Guten Nanobrewery. With an in-built heating element, pump and control panel, the brew vessel houses all of the attachments and accessories to forgo brewing and even cooking. A ½'' BSP ball valve is also attached to the side for wort transfer and sampling.

Malt Pipe Assembly

The Malt Pipe Assembly is used during the mash. It sits right inside the brew vessel and houses the grains. The assembly itself comprises of a malt pipe, an overflow telescope with ½'' BSP fittings, a top screen and a locking bottom screen.

Silicone Tubing

To assemble the malt pipe, use the bottom screen as a starting point with the screen's outer ridge facing downwards. Fit the ½" BSP pipe base through the central hole of the bottom screen with the threads facing up. Screw the threads onto a ½" BSP pipe socket then connect the socket to the overflow telescope. With the telescope facing up, drop the entire assembly into the malt pipe so that the outer ridge of the bottom screen fits right into the rolled edges of the malt pipe. The top screen is used later in the mash to keep the grain bed uniform.

Steel Handle

This is used to lift the malt pipe assembly out of the brew vessel. Insert the handle by wedging the ends into the 2 holes at the top. Once lifted out, you can sit the malt pipe assembly onto the brew vessel by rotating it so that the 4 welded leg brackets on the malt pipe are directly above the support beams of the brew vessel.

Silicone Tubing

This food-grade tubing is great for transferring liquids. It can be attached to the ball valve on the brew vessel or even on the immersion chiller for connecting to a garden hose.
When combined with a Camlock Type E fitting, it becomes a flexible extension of the pump arm, making recirculation easier than before. It is also now possible to transfer wort to a fermentor using the pump.

Immersion Chiller

A set of cooling coils used to cool your wort after the boil. The traditional way is to immerse the chiller in your brew vessel and run cold water through the chiller. Conversely, you can place the chiller in an ice bath and recirculate hot wort through it using the pump arm and ball valve as the inlet and outlet respectively.

4. Cleaning your Nanobrewery

Before starting a brew day, it is important to clean your Nanobrewery. Cleaning is necessary to remove unwanted materials, particularly in the vessel's internal structure. Not cleaning could lead to accidental infection of your final beer and/or structural damage to the brewing vessel.

Use cleaners that are odourless, non-abrasive and preferably non-caustic. We recommend using Atomic 15 ABC (Product code 9006), which is a highly effective, low-foaming cleaner.

Atomic 15 ABC (Product code 9006)

Other options include sodium percarbonate (Product code 6172) and other powdered brewery cleaners.
To thoroughly clean your Nanobrewery, fill the unit up to the top with water along with all of the disassembled parts inside. Add in the recommended amount of cleaner, heat to 60°C and leave to soak for up to 60 minutes. Afterwards, drain out the cleaning solution and rinse everything with water and leave to dry before use.

If you require scrubbing, use a sponge or a nylon scouring pad. Do not use steel wools as they may cause damage to the steel surfaces.

If you intend to run wort into the Immersion Chiller for cooling, then the coils will need to be internally cleaned. Connect one end of the chiller to the recirculation pump via the silicone hose and run hot cleaning solution through it. Clean for 5 minutes, drain then rinse with water thoroughly.

5. Basic Program Settings

5.1 Button Layout

5.2 Manual Mode

When you first turn on the Guten, the current temperature reading will show on the display screen. This is called Idle Mode. Press the 'MANUAL/PAUSE' button to enter the edit screen for Manual Mode. This screen allows you to make any adjustments on power, temperature and time on the fly. Press '+' or '-' to change the value of what's flashing on-screen. You can toggle between power, temperature and time settings by pressing their respective buttons. When you are happy with the overall setting, press 'START/STOP' to run it. An 'H' should flash on-screen to indicate heating. To exit back to Idle Mode, press 'START/STOP' again.

6. Brewing Operations

6.1 The Mash

Following from the previous instructions, fill your brew vessel up to the desired volume with water and insert the malt pipe. Heat the water to your first rest temperature before adding the grain. Adding grain to the water is referred to as 'doughing in.' Stir in the grains for up to 5 minutes with a mash paddle (Product code 0811) to break up any dough balls (dry areas) as well as submerse the grain into the liquid.

The liquid in your Nanobrewery is now referred to as 'wort' and the grains in the malt pipe are now referred to as the 'mash bed.' The wort will begin to take on the colour imparted by your mash bed and will gradually get clearer as you recirculate through the pump.

Once the grain has settled in, place the top screen over the overflow pipe. The purpose of the top screen is to evenly distribute the flow of wort from the pump into the grain bed during the mash and sparging. With the top screen in place, turn on the pump and allow the mash to recirculate gently for the rest of the mash period. Recirculation is important for maintaining an even temperature profile. You can control the flow of the pump with the valve under the Camlock fitting of the pump return.

Mash Paddle 0811

Sparging

6.2 Steeping

Brewing specialty beers and dark beers will require specialty grain steeping, which is done at around 70°C for no longer than 20 minutes. Any hotter or longer will extract unwanted tannins from the specialty malt. The right time to steep is typically after the mash before lifting the malt pipe up.

6.3 Sparging

Sparging is an intermediate step between the mash and the boil. It involves rinsing the spent grain bed with water, no hotter than 70°C, to extract more sugars which in turn adds more gravity points to the wort. It is not compulsory for homebrewing, however where mash efficiencies become relevant for commercial brewers, it is still good practice to utilise the most out of your grains.

To sparge on the Guten, start by lifting up the malt pipe and seating it above the brew vessel.

Wait for the wort to fully drain out (known as 1st runnings) before topping up the grain bed with sparge water (2nd runnings). The combined volume of both runnings will be your preboil volume. For most 5 gallon (19L) batches, a typical preboil volume is 7 gallons (26.5L).

Brewers can skip the sparge step altogether and adjust their recipes to include for extra grain to compensate. Preboil volumes in the kettle can be achieved by simply adding water to the wort before going into the boil.

6.4 The Boil

Remove the malt pipe from the brew vessel and heat the wort to boiling temperature. Increase the power setting to 2500W and set the time to 60 – 90 minutes depending on the beer style. At this stage, keep the lid on to increase heating and turn the pump off.

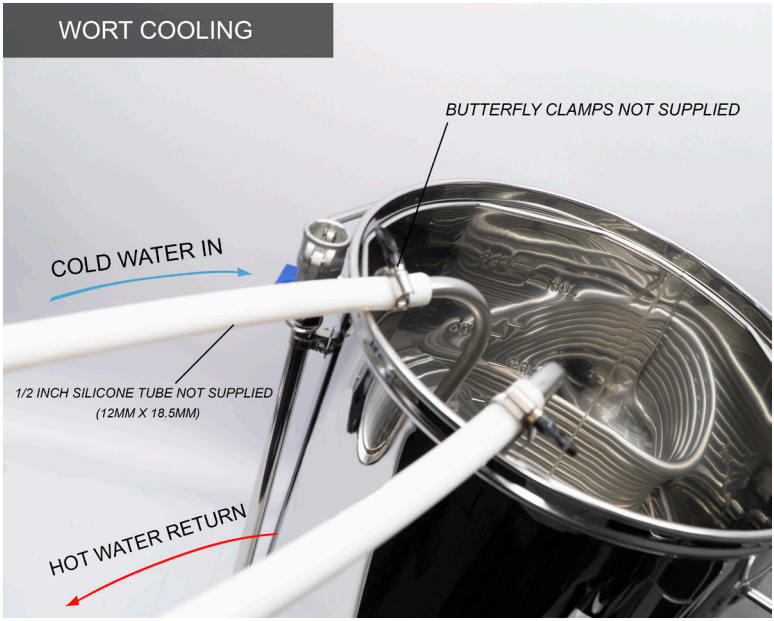
Weigh and portion out your hops according to your hop schedule. Any leftover hops should be closed and stored in a freezer to keep fresh for later brew days.

Once boiling temperature has been reached, take the lid off and pitch in your hops. Keep the lid off to allow unwanted volatiles to be boiled away. Stay on time with your hop schedule but most importantly, enjoy the fresh aromas coming out of your brewery.
Generally, a 60-minute boil at 2500W will remove 4 to 5 litres of wort through evaporation.

6.5 Wort cooling and transferring

Your wort has finished boiling and you are almost at the end of your brew day. We need to move the wort out of the brew vessel into a sanitary fermentor or 20L cube. If you plan to ferment on the day, then the wort needs to be cooled before moving into the fermentor. This can be done by simply placing the coiled immersion chiller into the wort and connect one end to a water hose. We recommend using silicone tubing to help with the connection. Turn on the water hose allow for the wort to cool down to 20 – 25°C. When you are ready to transfer, turn on the pump and slowly move the wort into the fermentor.

Once your fermentor is filled, turn off the pump, oxygenate your wort and pitch your yeast. Close off your fermentor and enjoy the fruits of your labour in a week or two.



If you are hot-cubing, then you can skip the cooling process altogether and transfer directly into a sanitised HDPE food grade cube using the pump. We recommend using a length of silicone tubing to siphon the wort to the bottom of the cube. Be careful to not splash your wort when cubing as this could introduce oxygen. Cap off your cube when it is filled to the brim, tip it on its side to allow the hot wort to get into the hollow handle and cap area. Your cube will now cool overnight and can be fermented when you are ready to pour it out into a fermentor and add yeast.

7. Advanced Program Settings

If you are brewing on a consistent schedule, it is worthwhile using Auto Mode. This mode allows you to create and run automated recipes (brew schedule) from start to finish. Up to 10 recipes can be saved in your Nanobrewery. Each recipe can hold up to 18 steps; 8 for mashing, 1 for the boil and 9 for hopping.

7.1 Running a Recipe

The Guten's default recipe comprises of 2 mash temperatures and a boiling stage with no hop schedule. We'll go through how to run it in order to get an understanding of Guten's Auto Mode.

On the Idle Screen, press AUTO/PAUSE to enter the edit screen for Auto Mode. The 1st step of the default recipe is set to 67°C for 60 minutes (R0S1). Press START/PAUSE to run the recipe. Once set temperature has reached, the Guten will beep continuously and the word 'MASHING' will flash on-screen. Dough in your grains before pressing 'AUTO/PAUSE' to start the timer.

Once the 1st timer is up, your Guten will move onto the 2nd step (R0S2) which is set by default to 78°C for 20 minutes. Note that the 2nd timer will not start until the Guten has reached its set temperature.

When the mash schedule is over, the Guten will beep non-stop. This is prompting you to make any preboil adjustments such as steeping, sparging or protein rests. When you are ready to go to the boil, press 'START/PAUSE'. A default timer for 60 minutes will start when boiling temperature is reached (R0S3). During the boil, the hop schedule will

automatically beep to let you know when to pitch in the hops. Since the default recipe has no hop schedule, the Guten will continue boiling until the timer is up. With 'END' on-screen, press 'START/PAUSE' to exit back to the Idle Screen.

7.2 Creating a Recipe

To create a recipe, press the AUTO/PAUSE button from Idle Mode. By default, 'R0S1' will display on-screen; R#' being the recipe number (R0 – R9) and 'S#' being the step number (S1 – S9). Adjust your power, temperature and time settings for the 1st step and when you are ready, press AUTO/PAUSE to move onto the 2nd step, 'R0S2'. Again, adjust your settings before pressing AUTO/PAUSE to continue.

Notice at 'R0S3', the temperature is set to boiling. By default, the Nanobrewery completes the mash in 2 steps. If you want to add more steps to your mash, simply change the temperature to be below boiling and proceed to adjust what is now the 3rd mash step. Up to 8 mash steps can be created per recipe.

Your mash profile will end when the temperature of your final step is set to boiling. For instance, if your mash has 8 different steps ('R0S1' – 'R0S8'), the boil profile will show at 'R0S9'. After setting the boil step, press AUTO/PAUSE to move onto your hopping schedule. Adjust the timer to suit your hop additions; note the number on the timer counts downwards. Press 'TIMER' to cycle through your hop additions. Up to 9 hop additions (HOP 1 – HOP 9) can be created during the boil. To make any final adjustments, cycle through the recipe settings with 'AUTO/PAUSE'.

When you are ready to run the recipe, press 'AUTO/PAUSE' from the idle screen then press 'START/STOP'. While the recipe is in operation, you can skip any steps with 'START/STOP' and make any real-time adjustments with 'AUTO/PAUSE'. The recipe itself is temporarily saved as long as the Nanobrewery is not switched off.

7.3 Saving a Recipe

To permanently save a recipe, press 'MANUAL/PAUSE' from Idle Mode, then press 'MANUAL/PAUSE' again, holding the button down for at least 5 seconds. A 4-note jingle should chime in, indicating that the recipe has been saved for next time.

7.4 Switching Recipes

To switch between recipes, hold down both 'POWER' and 'TIMER' on the idle screen for 5 seconds and release. The current recipe number will show on-screen. Press '+' or '-' to toggle between recipes and press 'START/STOP' to confirm.

7.5 Resetting the Guten

To reset the Guten back to its default factory settings, go to the Idle Screen and hold down 'AUTO/PAUSE' for at least 5 seconds. A 4-note chime will ring, and all of your previously saved recipes will have been deleted.

7.6 Changing Temperature Units

If you wish to change the temperature unit to Fahrenheit, hold down 'TEMP' on the Idle Screen for 5 seconds.

7.7 Calibrating the Guten

On the Idle Screen, hold down both the '+' and '-' buttons for 5 seconds. You'll be brought to the
calibration settings for temperature in degrees Celsius (C1) or degrees Fahrenheit (F1). Using the '+' and '-' buttons, you can toggle the temperature deviations; either ±10°C or ±50°F. Use spare temperature probes to compare against the Guten's temperature probe, which is located on the bottom surface of the vessel directly opposite to the pump inlet.

8. Maintenance

• Clean your Guten right away after brewing. Leaving your Guten unattended for the next day will make it harder to clean so you are better off doing the dirty work while the organic debris is still moist and readily removable.
• Always keep your Guten dry and switched off in storage. Keep the lid on to prevent dust particles from falling in.

9. Troubleshooting Tips

• If the pump gets blocked, you can reverse flush the pump by connecting a hose to the Camlock fitting on the pump arm to clear the blockage.
• If you are having trouble heating the vessel to boiling temperature, put the lid on the Guten. Remember to take off the lid once you are in the boil.
• If your Guten suddenly turns off and breaks the circuit, either your power settings are too high or your control panel has too much moisture in it. Reduce the power settings or wait for the control panel to dry before operating your Guten.

10. Guten Accessories

From brewing packages to fermenters to distillation gear, our Guten product lineup is growing increasingly at MCH Australia.
For all things Guten, please visit our website at www.keg-king.com.au and type in 'Guten' in the search bar.

CONTACT US

MCH Australia P/L
Trading as Keg King
48 Smith Road
Springvale VIC 3171
Australia

WWW.KEG-KING.COM.AU

11. Example Recipes

Pale Ale Recipe (Makes 21 litres)

OG: 1.050 – 1.052
ABV: 5.1 – 5.6%

Ingredients

Grains
Pale Ale Malt 5kg (Base)
Munich Malt 0.35kg (Base)

Hops

Magnum 19g at 60 minutes on the timer
Columbus 7g and Cascade 7g at 10 minutes on the timer
Columbus 14g and Cascade 14g at 0 minutes on the timer

Yeast

WLP001 or Safale US-05. For a straight pitch, use 2 packs of either. Otherwise, use one pack to make a starter 2 days before brew day.

Procedure

Mash your grains in 15L of water at 66°C for one hour with the pump on. Afterwards, turn the pump off, lift up the malt pipe and allow the wort to drain into the brew vessel. Sparge the grains with 12 – 15L of water no hotter than 70°C until the water volume has reached 26.5L (7 gallons). Boil for one hour and pitch the hops into the hop spider according to schedule. Keep in mind that 60 minutes refers to the start of the boil and 0 minutes is the end. After the boil, remove the hop spider and insert the immersion chiller for cooling. You can turn on the pump again to speed up this process. Once the temperature reads 25°C or less on-screen, transfer the wort to a sanitary fermenter, pitch in the yeast and let the magic happen.

Oatmeal Stout Recipe (Makes 21 Litres)

OG: 1.051 – 1.055
ABV: 4.8 – 5.1%

Ingredients

Grains
Maris Otter 4.25kg (Base)
Flaked Oats 0.45kg (Base)
Chocolate Malt 0.35kg (Steep)
Biscuit Malt 0.35kg (Steep)
Dark Crystal Malt 0.23kg (Steep)
Roasted Barley 0.23 kg (Steep)

Hops

East Kent Goldings 51g at 60 minutes on the timer

Yeast

WLP002 or Safale S-04. For a straight pitch, use 2 packs or make a starter with 1 pack 2 days prior to the brew.

Procedure

Mash the base malts in 15L of water at 68°C for 1 hour. Afterwards, add in the specialty malts and allow to steep for no longer than 30 minutes without the heating elements on.

Lift up the malt pipe and allow the wort to drain into the brew vessel. Sparge the grains with 12 – 15L of water no hotter than 70°C until the water volume has reached 26.5L (7 gallons).

Boil for one hour with the EKG hops inside the hop spider. Afterwards, remove the hop spider, turn on the pump and insert the immersion chiller for cooling. Allow the wort to cool down to 25°C or less before transferring to a fermenter with yeast.