

10-20-50 ltr.



Translation from the German original
Operating/brewing instructions
Speidels Braumeister
Item No.: 41010, 47070, 45050



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1 General information

Dear customer,

You have purchased a new device from our company. Thank you for your trust in our product. Quality and functionality of our products rate high on our list of priorities.

Intended use:

The Braumeister is designed and produced for brewing smaller amounts of beer (approx. 10 L/ 20 L/ 50 L). Prior to each brewing procedure, a safety inspection must be performed in order to ensure proper functionality of the Braumeister.



Operating instructions

These operating and brewing instructions have been compiled to ensure reliable and safe commissioning and operation of the Braumeister right from the start. Please read the instructions carefully and in full before brewing your first beer. Compliance with this information and instructions will ensure that your Braumeister operates to your utmost satisfaction and has a long lifespan. Weight and quantity always refers to 10 L/ 20 L/ 50 L. The first specification applies to the 10 L Braumeister, the second specification applies to the 20 L Braumeister, and the third specification applies to the 50 L Braumeister.



Declaration of Conformity

SPEIDEL Tank- und Behälterbau GmbH hereby declares that the “Braumeister” product mentioned in these instructions, and to which this declaration applies, is in compliance with the regulations of the following European Guidelines:

EMC 2004/108/EG, Low-voltage 2006/95/EG

Manufacturer

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2 Safety instructions

2.1 General safety instructions



- The device and its mains cable must be inspected regularly for any signs of damage. In the event of signs of damage, the device may no longer be used.
- If you do not wish to use the device any more, for cleaning purposes or in the event of a fault, always disconnect the plug from the socket (pull the plug, do not pull on the cable). Thereafter, you may remove the cable from the control system.
- Ensure to route the mains cable such that it does not come into contact with sharp objects. Ensure to unwind the cable completely.
- If you are using an extension cable, ensure both cables have the same wire cross-section. Ensure to unwind the extension cable as well. Do not use multi-sockets as the power output of this device is too high. Overloading the electric diffuse must be

avoided. As the Braumeister requires extra power, do not use the same fuse to protect other “large consumers”. **Fire hazard!**

- The Braumeister must only be used as intended. It must only be operated in a safe, fault-free condition. Ensure to check the proper condition prior to each use.

Children and frail persons:



- For the safety of your children, keep packaging parts (cartons, polystyrene etc.) out of children’s reach. Keep foils out of children’s reach. The risk of **asphyxiation!**
- This device is not meant to be handled by persons (including children) with limited physical, sensory or mental capabilities, or lack of experience and/or know-how, unless they are being supervised by a person responsible for their safety or the person has received instructions on how to use the device safely.
- Children must be supervised to ensure that they are kept away from the device and do not play with the device.

2.2 Safety instructions



- The temperature of the container, lid, and add-on parts can become extremely high. Towards the end of the brewing process, the boiler contains boiling beer wort. Observe the installation instructions. Never move the Braumeister while it is hot. Always use pot holders or gloves when working on and with the Braumeister. **Risk of burning!**

- When lifting the lid, ensure that the condensation on the underside of the lid flows back into the container. For this, hold the lid over the container at an angle. **Risk of scolding!**



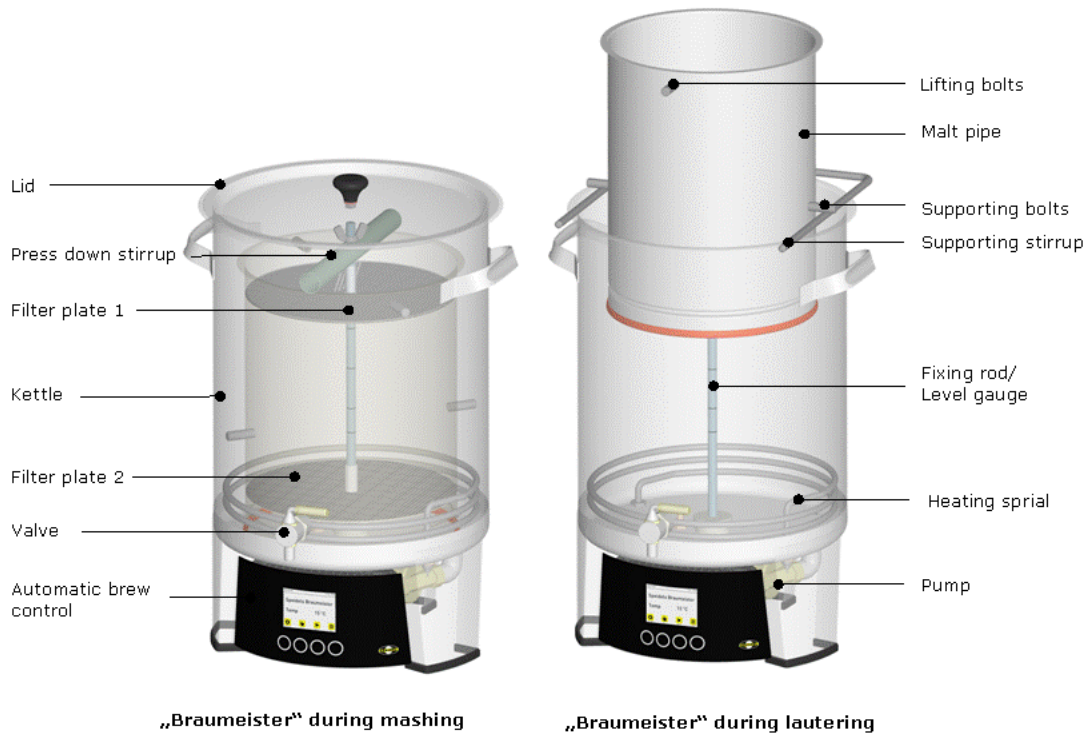
- The Braumeister consists nearly completely of stainless steel (electrically conductive). For this reason, it may only be operated via a residual current circuit breaker 30 mA. Usually, a residual current circuit breaker already exists in the house installation. **Risk of electric shock!**



- When performing cleaning activities on the Braumeister always ensure that the plug is disconnected (disconnection from mains). Do not spray the device down or allow spray to come into contact with electric components. **Danger of electric shock!**
- Important: It is imperative that you secure the plug connections at the rear of the device (pump and heating) during operation of the device. Operating the device without securing plug and socket devices can lead to overheating. **Fire hazard!**
- Please use the thermal sleeve available as an accessory for insulation. When using your own insulation ensure that the electronics and the lower part of the Braumeister are sufficiently ventilated, as a heat build-up and damage to the control may otherwise occur.
- The pump must be vented prior to each use to prevent dry running. Venting takes place routinely in automatic operation. In the manual operation, the pump must be switched on and off several times until no more air bubbles escape.

3 Components and scope of delivery

Please refer to the following illustration for components and the scope of delivery (cooling coil and fermentation vessel not included): The 50 L Braumeister is operated with 2 circulation pumps and 2 heating coils, and has an additional handle on the rear (omitted for clarity).



4 Technical specifications for Braumeister

Braumeister 10 L

Weight	10 kg including internal fittings and lifting handles
Heating coil:	1000 Watt heating capacity
Pump:	1 x 9 Watt
Power connection:	230 V ~
Min. fuse protection:	10 Amp with residual current circuit breaker
Contents:	Brewing quantity approx. 10 L ready-to-drink beer (regular beer) = approx. 11 L beer wort
max. fill level:	upper marking on tie rod = 12 L
Max. kg of malt:	2.8 kg

Braumeister 20 L

Weight	15 kg including internal fittings and lifting handles
Heating coil:	2000 Watt heating capacity
Pump:	1 x 9 Watt
Power connection:	230 V ~
Min. fuse protection:	10 Amp with residual current circuit breaker
Contents:	Brewing quantity approx. 20 L ready-to-drink beer (regular beer) = approx. 23 L beer wort
Max. fill level:	Upper marking on tie rod = 25 L
Max. kg of malt:	6 kg

Braumeister 50l

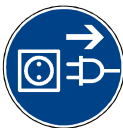
Weight	24 kg including internal fittings and lifting bows
Heating coil:	3200 Watt heating capacity
Pump:	2 x 9 Watt
Power connection:	230 V ~
Min. fuse protection:	16 Amp with residual current circuit breaker
Contents:	Brewing quantity approx. 50l ready-to-drink beer (regular beer) = approx. 53l beer wort
Max. fill level:	Upper marking on tie rod = 55l
Max. kg of malt:	13 kg

5 Setting up the Braumeister



The Braumeister must be positioned on a stable, secure and horizontal support structure prior to use. Careful! A full Braumeister vessel contains boiling hot beer wort and can weigh up to 30 kg, 50 kg or 90 kg. Horizontal positioning is a prerequisite for transfer pumping during the brewing process. Avoid an unsteady base. Most suitable are a stable wooden box or a table that is not too high. The Braumeister may not be moved during the brewing process. The handles are only meant for transporting the device in an empty state. It is imperative to keep children and frail persons away from the device while it is in operation.

6 Cleaning the Braumeister



The Braumeister must be cleaned immediately after the brewing process. Avoid surface drying of wort and malt remnants, as this will significantly impair the cleaning process. All stainless steel components can be cleaned using a conventional detergent. Abrasive agents and sponges/brushes that cause scratching are not suitable. Ideally use a pipe cleaner thread to clean the heating coil. The pump and its internal drive ball should also be rinsed regularly. For this, simply turn the Braumeister upside down and loosen the screws, which should at all times only be hand tightened. The pump can be removed completely from the Braumeister by simply loosening the plug screws. When cleaning the brewing vessel ensure that no water spray or moisture comes into contact with the electrical components. The current supply must be disconnected for performing cleaning activities on the Braumeister. Before starting the brewing process, remove all dust and dirt from the Braumeister and all internal fittings by means of warm water. Also rinse the pump and lines by means of transfer pumping. Caution: If you allow the pump to run longer than a few seconds for cleaning, ensure that it is sufficiently vented to avoid dry running (switching the pump on and off several times provides good venting). Ensure that you include the malt pipe seal and drainage tap as well. Make sure that no detergent remnants whatsoever remain in the Braumeister, as these could have a negative impact on the foam stability of the beer. Please refer to the detailed cleaning instructions on page 27 (cleaning set available as an accessory).

7 Storing the Braumeister

The Braumeister must be stored in a dry location. Avoid contact with ferrous or rusty objects.

8 Prior to first use

Clean the Braumeister thoroughly using lukewarm water prior to initial use (see Chapter 6). Refer to the safe installation of the Braumeister. See description in Chapter 5. Ensure that the Braumeister is in a flawless condition. Refer to the safety instructions in Chapter 2. The Braumeister is designed for immediate use.

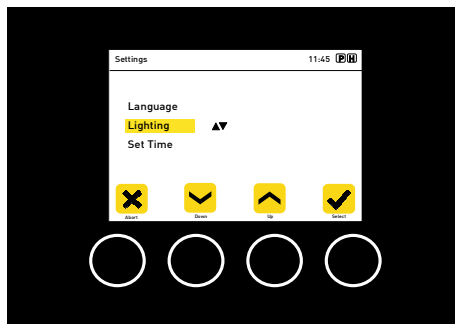
9 Disposal



Meaning of the “refuse bin” symbol on the Braumeister: Protect our environment; electrical devices should not be disposed of as household refuse. Make use of collection points for disposal of electrical devices and hand in all electrical devices that you no longer wish to use at these points. In this manner, you can avoid a potential impact on the environment and human health caused by incorrect disposal. This is your contribution to recycling and other forms of use of waste electrical and electronic equipment. You can find information on where to dispose of the devices from your district or municipal administration.

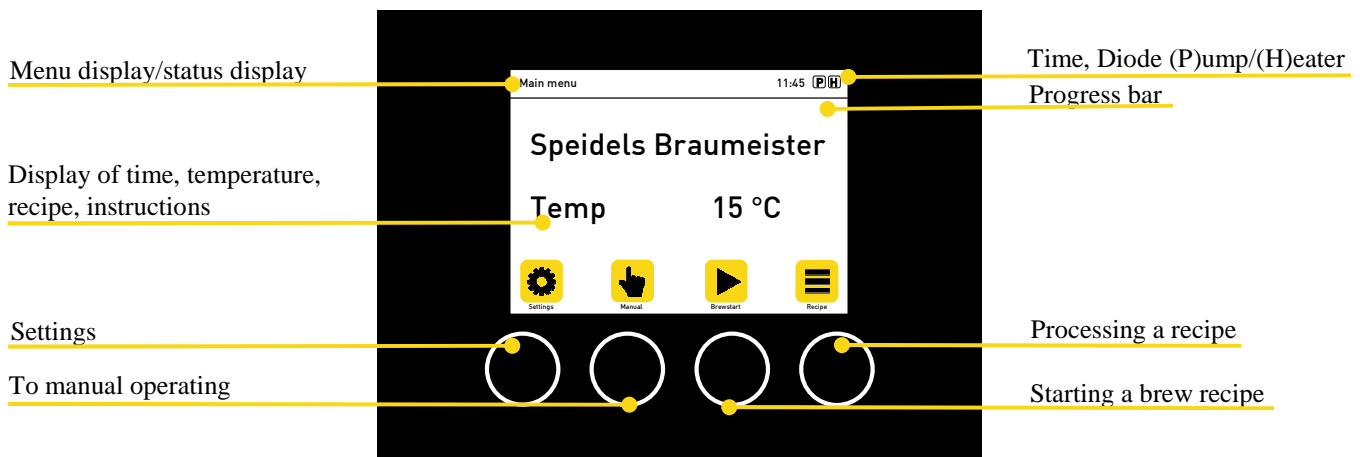
10 Working with the Braumeister

10.1 Language selection/illumination/time



When pressing the *Settings* button in the main menu, the language, illumination, and time screen opens. The arrow keys allow you to make a selection, and choosing the *Select* function takes you to the various options. These, in turn, can also be selected by activating the arrow keys. Acknowledge your selection by pressing the *Select* button. Press the *Abort* button to return to the main menu.

10.2 Brewing control information



Automatic mode: Press *Brewstart*, select a recipe and press *Select* to start. Follow the instructions. A detailed description can be found in the chapter below “Brewing with the Braumeister”.

Recipes: Up to 10 recipes can be stored when selecting the *Recipe* function. When you receive the equipment, 2 recipes are included. Use the arrow keys to select a recipe first, create a new one or delete a recipe. Pressing the *Select* function to change an existing recipe. The arrow keys allow you to modify any entries. Use the *Select* key to move to the next recipe item until you have reached the end. Once all items of the recipe have been acknowledged by pressing the *Select* key, the recipe is applied and stored.

Manual operation: During the manual operating mode, the pump and the heater can be switched on and off. The symbol in the upper right-hand corner indicates whether the pump is on or off. If the symbol is highlighted in yellow colour, the pump is on. If the symbol is highlighted in light yellow, this indicates that the pump is activated, however, it is not on since the liquid is still too hot or the heater is activated and the actual value is greater than the

setpoint. Use the *Temperature* button on the right-hand side to set the target temperature; then, activate the arrow keys and the *Select* button.

Cancel:

When pressing the *Abort* button, you are taken back the Start menu, regardless of the operating mode you are currently in (Automatic/Brew start/Recipes, and manual mode). While in Automatic mode, the red-coloured light elements are lit. A prompt will be displayed asking whether the procedure shall be finally aborted or whether this process shall continue.

10.3 Circulation pump information

While in the manual mode, the circulation pump can be switched on and off. It is important to vent the pump while in manual operating mode after filling it with liquid, so as to ensure that it does not run dry and possibly incur damage. This can be achieved by filling the pump with water and switching it on and off several times (until no more air bubbles escape and the sound of the pump is barely inaudible). During the brewing process and while in manual mode, the pump switches off automatically as soon as the temperature exceeds 88°C. This protects the system. If the temperature drops to 84°C the operation continues.

10.4 Notes on the container lid



The lid assists in reaching the temperatures more quickly in the heating up phase. The ventilation slits avoid pressure forming in the vessel and allow for a light air circulation. Higher water temperatures cause condensation to occur on the underside of the lid. When lifting the lid, ensure that you hold the lid rim over the vessel opening (at an angle) so that the condensation can run back into the vessel.

10.5 Notes on hygiene

Hygiene is of top priority when brewing beer. Especially in the cold process area (while cooling off, when decanting and while fermenting), the beer and the wort are susceptible to infection, which causes the beer to spoil, meaning that all work could be in vain. For this reason, take particular care in ensuring that all containers (fermentation vessel, bottles) and work materials (spoon, taps, seals) are meticulously clean. In order to disinfect these vessels and equipment, a special disinfecting agent is recommended. You may purchase these items at a local hobby wine-making or beer-making store. This disinfecting agent is also suitable to use in the fermentation lock, to disinfect the fermentation vessel and other equipment. When disinfecting bottles and/or ageing barrels proceed in the same way as when disinfecting fermentation vessels. In this manner you can ensure that the fermented beer is filled into meticulously clean bottles or ageing barrels. When using ageing barrels, this process should be completed a few days prior to the end of the fermentation. This ensures that the filling process can be done quickly and without stress.

11 Brewing with the Braumeister

11.1 Introduction

Making beer with the Braumeister can be split into different phases, whereby each phase is individually described below. To start off, all phases are described in general: The brewing procedure applies to all beer types and recipes. An actual brewing example for first-time brewers and a special recipe with precise indications of quantity, brewing times and temperature levels are provided in the chapters that follow. Before starting to brew beer, we recommend that you gain an overview of the individual steps required for preparing a ready-to-drink beverage. To ensure that you do not miss any steps and to allow you to gain an overview of your brewing procedures in retrospect, we recommend keeping a brewing record (see Record in the attachment or go to www.speidels-braumeister.de). Another tip: Allow yourself a day for your first brewing attempt, and where possible have another person join you, as it is much more fun together and another set of hands can be very helpful. Note that brewing beer requires a little experience and that each brewing process is an improvement on the previous one. So don't be disappointed if your first beer does not quite meet your expectations. This is perhaps best illustrated by the words of a witty German poem that suggests that the beer from the first attempt is neither here nor there and is bound to cause flatulence, while the second is mediocre, causing you to pass more liquid than you consumed.

The third attempt results in a true beer enjoyed by
men and women alike (in German):

„Das erste Bier ist ein Plempel,
der den Bauern d'Hosen z'sprengt:
Andern zum Exempel.
Das zweite ist ein Mittelbier,
Trinkst drei Maß, so pieselst vier.
Das dritte ist ein Bier vom Kern,
das trinken d'Herrn und d'Frauen gern.“

11.2 Preparations

Procuring the ingredients

Organise the required brewing ingredients (hops, malt and yeast) in good time. Ensure that the malt is fresh. After crushing the malt (breaking open the corns – not too fine) use it up as quickly as possible. The quantities vary slightly, depending on the recipe. However, the amount of malt is 2-2.5/4-5/ 9-11 kg and the amount of hops is about 15-40/ 20-80/ 50-150 g. Normally, the hops is supplied in a pressed form as pellets. We recommend using dry yeast for fermentation as it can be stored more easily and has a longer shelf life. These ingredients are available at commercial outlets for hobby brewers and via the internet.

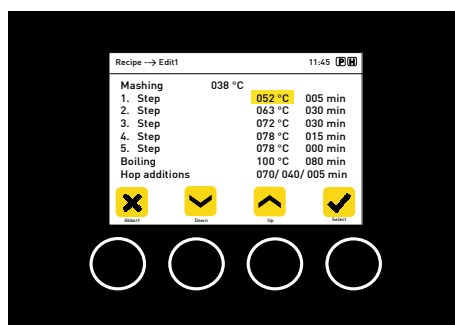
Cleaning the devices

Before starting the brewing process, rinse the Braumeister with warm water and flush the pump by switching it on. All other equipment such as the beer spindle, wooden spoon and fermentation vessel should be ready for use and clean. See also the notes in the chapters “Notes on hygiene” and “Cleaning the Braumeister” in this regard.

Decalcifying the water for brewing

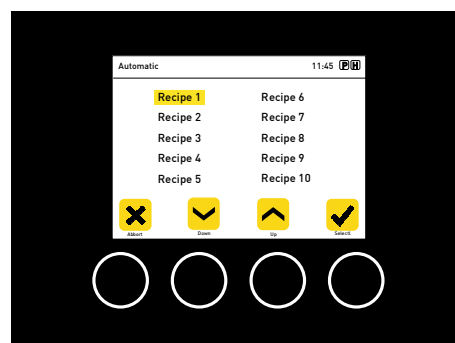
Where required, the brewing water can be decalcified. For this, boil the water (cold tap water) in the Braumeister for 30 minutes, allow it to cool and then store it temporarily, for example in the fermentation vessel, until you are ready to start brewing. Dispose of the precipitated calcium that has collected at the bottom of the container. The Braumeister is designed to brew approx. 10 L/20 L/ 50 L ready-to-drink beer (regular beer). You will need 15-20 L/25-30 L/55-60 L brewing water. However, normal (perfectly hygienic, colourless and odourless) cold tap water can also be used by beginners, that is, for first brewing attempts, to keep the effort slightly in check to start off with. In principle, the brewing water should display a hardness less than 14°dH. The softer the water, the better it is suited to brewing.

11.3 Programming/ starting automatic brewing



Plug in the Braumeister. The control is now in a basic state. In order to program a recipe, its time and temperature values, press the *Recipe* button. Use the arrow keys in the menu display above to select the recipe with which you would like to work. you can also create new recipes (up to 10) or delete recipes. Two standard recipes are included with the delivery. Press *Select* to invoke the recipe. Continue pressing *Select* while in the recipe step by step until you reach the end.

Use the arrow keys during this process to set the time and temperature. The recipe will be stored if the recipe is confirmed at the end and the cursor in the recipe selection skips to the menu bar. You may program up to 5 rest periods. If a rest period is not required, simply program it with 0 minutes. Three batches of hops with the same time before the end (refers to the time of how long the hops will be brewed) of the brewing process can be brewed. By pressing *Abort*, you are taken back to the Start menu



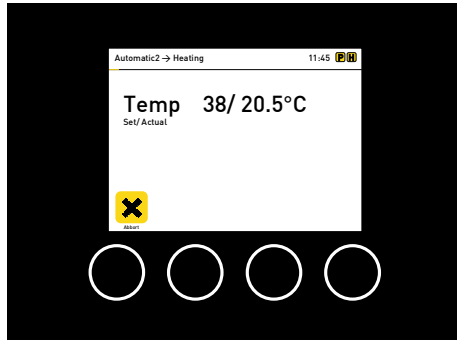
Go to the Start menu and press *Brewstart* and select the respective previously programmed and verified recipe. Start by pressing the *Select* button. Subsequently, the water starts filling. Follow the instructions in the program.

11.4 Mashing

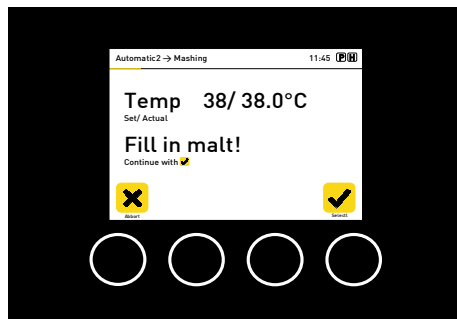
Mixing the malt grist with water is known as mashing. The aim of the entire mashing process is to separate the malt starch contained in the malt from the malt and to convert it into sugar with the help of the enzymes contained in the malt. The various enzymes act at different temperatures, which is why the process undergoes different temperature levels.

Mashing in

First, fill the vessel with 12 L/ 23 L/ 55 L of brewing water. The malt pipe is not yet inserted. The markings on the tie rod indicate the filling level of 8 L, 10 L and 12 L/15 L, 20 L, and 25 L or 45 L/50 L and 55 L. Press *Select* to acknowledge that the water has been filled. This switches on the pump and the heating. The pump switches on and off several times for the purpose of venting.

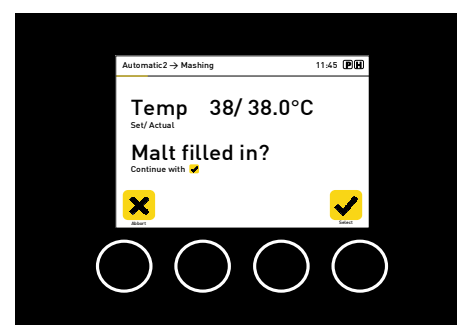


The pump and the heater are switched on until the programmed mashing-in temperature has been reached. The (P)ump and (H)eating symbols illuminate in yellow colour. The target and actual temperatures are shown on the display. The upper status display indicates for instance Automatic3. This means that the brew automatic mode with recipe 3 was started. Subsequent, a message appears indicating the current program phase.



When reaching the mashing-in temperature, a signal will be sounded and the lights will be blinking. This must be acknowledged by pressing the *Select* button. This switches the pump off. Now, follow the instructions of the brew control.

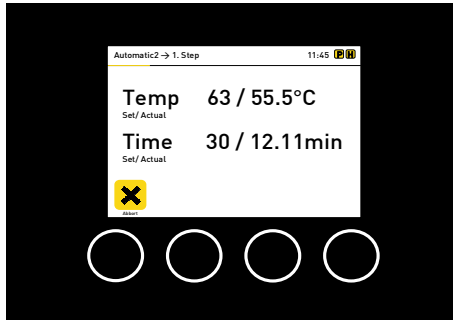
The malt pipe can now be inserted into the vessel, with the seal facing downwards. Ensure that the pipe is in the centre and sitting flat on the bottom. Then insert the first sieve screen (tubular sleeve upwards) into the malt pipe and place the first fine sieve on the screen. Now pour the entire roughly crushed malt into the malt pipe using a shovel and stir in thoroughly. Ensure that the malt is carefully added to the malt pipe so that nothing falls into the vessel, as this could block the pump. Then insert the second fine sieve and the second filter plate (tubular sleeve upwards). To secure the malt pipe and clamp it down, fasten it with the bow and the wing nut while pressing it down.



Once you have filled the malt, acknowledge it by pressing the *Select* button. For safety reasons, you will receive the prompt "Malt filled in?" And by pressing *Select* the actual brew process commences with the Braumeister. The pump and the heating switch on. The wort rises up in the pipe and overflows. The cycle has begun and the malt is washed out by means of transfer pumping in the next phases.

Protein rest:

In the protein rest, the large protein molecules in the malt are split into small components. Protein rest is important for purification and full body, but especially for foam stability and carbon dioxide binding capacity of the beer. The temperature is around 52°C, and is maintained for 5-20 minutes, depending on the recipe programmed. In order to achieve a better stability of the foam, some recipes omit this phase.



The display now indicates the rest, target, and actual temperature, and the target and actual time. After the target temperature has been reached, the countdown starts. All other phases are processed fully automatically. The display indicates in the respective times and temperatures.

By pressing in the *Abort* button, the brewing process will be interrupted. Subsequently, a prompt will be displayed asking whether the Automatic process shall be continued or if the entire process shall be cancelled. During this time, the red light is blinking.

Maltose rest.

In the second phase, the maltose rest, starch molecules are converted to fermentable sugar with the help of additional enzymes present in the malt. This phase is an important stage in the brewing procedure for alcohol formation, as the largest quantities of sugar are formed here. Extending the rest means gaining more sugar in the wort, which leads to a stronger beer. Shortening the time results in beer with a fuller body, due to the increased dextrins. The temperature is around 63°C and is maintained for a period of approx. 35 minutes. As is the case in the first phase, the control shows the relevant data in the display. All following processes (phase 2 to phase 5) are handled fully automatically by the control system. During the entire mashing process, the pump is switched off briefly every 10 minutes (pump break), to reposition the malt and thereby achieve a better yield. The lid of the Braumeister is in place to save energy.

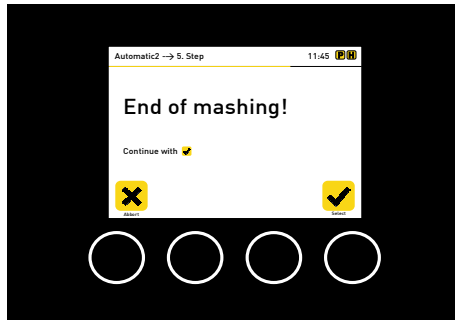
Sugar rest 1:

During the third mashing phase additional starch components are split with the help of enzymes active at this temperature level, and liquefied in the wort. The temperature is approx. 73°C and will be maintained for approximately 35 minutes.

Sugar rest 2:

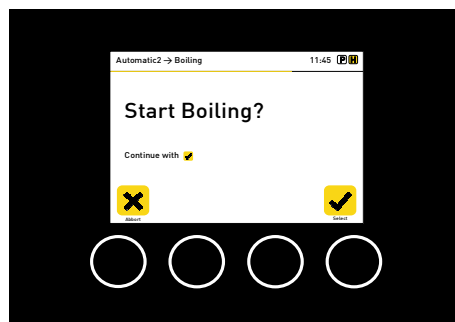
In the last phase the residual starches continue to saccharify, thereby forming even more unfermentable extracts, which give the beer slightly more body. The wort is heated to 78°C under continuous transfer pumping and then maintained at this temperature for 10-20 minutes. An iodine test can be used to determine whether the wort still contains residual starch. For this, allow a little wort to drip onto a white plate and add a little iodine. If the sample turns brownish red or yellow, sufficient saccharification has taken place. If this is not the case, the temperature level must be maintained for a longer period of time.

11.5 Purification



After completion of the programmed brewing phases, another signal tone is emitted. This will also be acknowledged by pressing the *Select* button. The pump switches off and you are prompted to start purifying. Remove malt pipe. Purification means separating the crushed malt from the beer wort. Purifying with the Braumeister is a relatively easy, fast and clean exercise, compared to many other home brewing methods, and represents a central concept of the Braumeister. Remove

the wing nut including hold-down bow. Place the drip bow on the edge of the brewing vessel and use the lifting bow to carefully and slowly remove the malt pipe from the brewing vessel. Suspend the malt pipe from the support bow on the lower support bolts to allow the beer wort to drop from the malt into the vessel. Loosen the last remaining extract by washing out the spent grains once more. This process is known as “sparging” (process not essential). This is called sparging and is performed by pouring water at 78°C (max 78°C – do not use boiling water) into the top of the malt pipe. Remove the upper filter plate including screen cloth and use a long wooden spoon to pierce the spent grain a little so as to allow the “trapped” beer wort to continue running off or draining. During the lautering process, the temperature remains constant at the pre-programmed temperature of 78°C. After 15 to 20 minutes of lautering, remove the malt pipe completely and discard the malt residue. For safety reasons, we recommend using heat-resistant gloves for this part of the process, as all components will have reached extremely high temperatures.

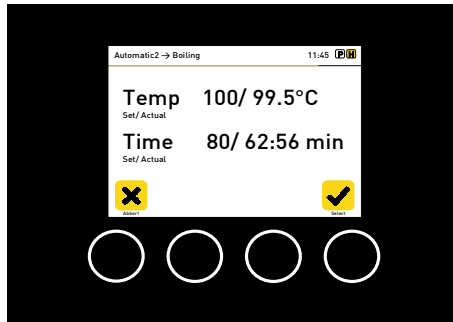


After removing the malt pipe, acknowledge it by pressing the *Select* button. In order to start the hops boiling process, press the *Select* button again. The pump and the heating switch on again and the automatic process continues.

Once the purification process is complete, the wort content should be checked. This is important for ensuring the required original wort content of the wort,

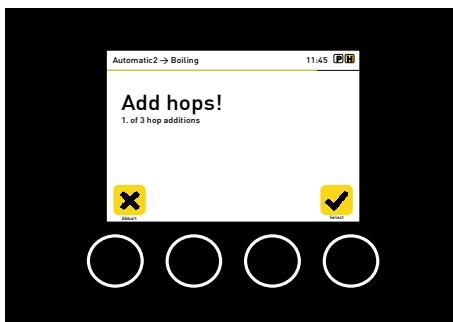
so as to be able to adjust the subsequent alcohol content of the beer as well. Fill a graduated cylinder (accessory) and determine the wort level at the time of sampling. For this, use the upper three filling level rings on the tie rod to assist you (8/10/12 L or 15/20/25 L or 45/50/55 L). Estimate the levels between these markings correspondingly. For measuring the original wort using a beer spindle (accessory), first cool the wort sample to 20°C to ensure an exact measurement. In order to do this, cooling inside a refrigerator is recommended. However, as the original wort is proportional to a certain liquid level, you do not need to wait until you have performed the measurement. Simply continue with the next phase of the hops boiling process and subsequently correct or adjust the original wort.

11.6 Hops boiling process



As described in the previous section, automatic brewing continues and the hops boiling process is started. The display again shows the time and temperature of the phase. As the target temperature of 100°C cannot always be reached, timing starts after a waiting period of 2 minutes without increase in temperature. When pressing the *Select* button during the automatic mode, the target temperature and target time can be corrected or changed. Wort is boiled during this phase. On the one hand,

coagulable proteins are excreted and on the other hand wort is sterilised, which means that all bacteria that could potentially spoil the beer during fermentation are destroyed. As already mentioned in the description of the previous phase, the original wort can be adjusted by means of evaporated water or by topping up water. Hops is also added during the boiling period of 80-90 minutes, which imparts the required bitterness as well as the aroma to the beer. Depending on the recipe and taste, the amount of hops added can vary. Once the wort sample at the end of the previous phase has been measured in terms of original wort, it is set by means of the liquid level. Where the original wort content is equal to the target value, the level must be maintained right to the end by topping up boiling water. Where the original wort is too high, the wort is diluted by topping up with water and increasing the liquid level correspondingly. Care must be taken to replace evaporating water as well. Conversely, the liquid level must be decreased (through water evaporation) if the original wort content is too low, which leads to a higher concentration of sugar in the wort and consequently also to a higher alcohol content in the beer. It is essential that the boiling phase in the brewing vessel is performed without a lid. This prevents the wort from boiling over, but more importantly, it is also necessary for the hops boiling process to ensure that all unwanted aromatic substances can evaporate from the hops, as they would otherwise impact negatively on the taste of the beer.



Adding hops originally also served to better preserve the beer. Acoustic signals will be sounded for the batches of hops to signal the times that are programmed into the recipe. Depending on the type of hops and bitter substance content, add the first batch of hops to the boiling wort 10 to 15 minutes after boiling has started. The hops remains in the wort during the entire boiling period, as its substances only begin to unfold their effect after boiling for some time, thereby imparting the

intended hops bitterness to the beer. The resins and oils in the hops are also released, which then ultimately gives the wort its malt flavour. You can then add another batch of hops approx. 10 min before the end of the boiling period, which merely adds to the flavour. Additional excretion of bitter substances is no longer possible in the remaining time. The type of hops, quantity, and the number of hops batches differ according to the recipe and type of beer being brewed. You may program three hops batches. Hops can be added in the form of pellets or dried hop blooms. The bitter substance content in beers is indicated in bitter units (BU) and is around 10-20 BU in wheat beers and 25-45 BU in Pilsners.

The bitter substance content of hops is indicated in % alpha acid, which can be between 2-4% (approx. 8% in pellets). The following formula can be used to calculate the hops quantity:

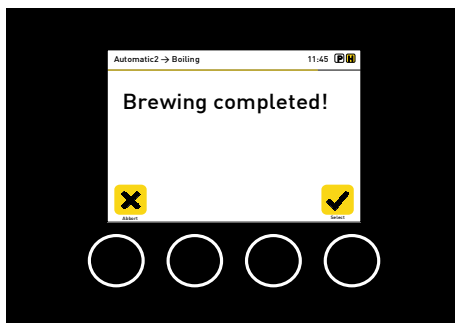
$$\text{Hops in Gramm} = \frac{\text{Bitterunits (BE)} \times \text{Liter Beer} \times 10}{\% \text{ Alpha acid} \times \% \text{ Efficiency of Bitterness}}$$

A bitter substance concentration of 30% can be assumed for a total boiling period of 80-90 minutes

Example:

A volume of 20l of wheat beer with a bitter substance content of 15 BU is to be brewed. The hops available has an alpha acid content of 3%. Thus, the following hops quantity is derived, which is added at the beginning of the boiling process. The hops added shortly before the end of the boiling process is not included in this calculation, as no more noteworthy bitter substance amounts are imparted to the wort in this short period of time.

$$\text{Gramm Hops} = \frac{15 \text{ BU} \times 20 \text{ Liter} \times 10}{3\% \times 30\%} = 33 \text{ g}$$



Once the boiling time has elapsed, another signal tone is emitted, indicating the end of the brewing procedure. Use the *Select* button to acknowledge it. The heating switches off.

11.7 Cooling

From now on, it is essential that you work in absolutely sterile conditions, as any contamination through bacteria in the air or through unclean devices during all subsequent work steps could lead to all your work being in vain. All devices used must be thoroughly cleaned or disinfected. Please see the notes in the chapter “Notes on hygiene”.

Before inserting the cooling coil, we recommend stirring the hot wort thoroughly using a long wooden spoon. This creates a so-called whirlpool effect, which promotes the sinking of the trub in the wort, which means that the wort becomes clear. In particular, the cooling process serves to cool the wort and to aid additional settling of all proteins and hops compounds released during boiling. This trub slowly settles on the base of the container, where it remains once the clear wort is drained. Avoid stirring or moving the cooled wort, as this will cause the settled trub to whirl up again and also flow into the fermentation vessel. We recommend using a so-called wort cooler (cooling coil – see accessories), which is placed into the wort immediately after the boiling process, and is disinfected as well as this manner. Cooling is achieved by means of cold water. The water that flows through the cooling coil draws the heat

from the wort and cools it to the required temperature of 20°C in 40 – 50 minutes. Caution: To start off with, the water at the outlet of the wort cooler is still close to boiling temperature (scalding risk), which can be re-used for cleaning activities at a later stage. It is especially important to cool the wort quickly between 40° and 20°, as it is particularly susceptible to infection in this range. Once the wort has cooled to 20°C, remove the cooling coil carefully from the vessel and drain the beer wort into a disinfected fermentation vessel (see accessories) via the drainage tap. However, prior to this, approximately 5% (0.5 L for 10 L or 1.0 L for 20 L or 2.5 L for 50 L of wort) will be drawn into a lockable vessel and stored in a cool place. This is added to the fermented beer at a later stage, so as to achieve secondary fermentation and sufficient formation of carbon dioxide in the filled bottles. Use a suitable clean pipe or funnel for decanting. The last litres are decanted by carefully tilting the Braumeister, taking care not to allow any trub to flow into the fermentation vessel as well. The fermentation vessel or container should be significantly larger than the quantity of wort to allow sufficient fermentation space and to prevent overflowing of the fermentation foam. The last remains and the trub at the base of the Braumeister can be disposed of. Please clean the Braumeister as quickly as possible after use so as to avoid surface drying. This facilitates the cleaning process considerably.

11.8 Main fermentation

Once the cooled wort has been filled into a fermentation vessel (12 L/30 L/60 L PE vessel with drainage tap – see accessories), add the yeast to the wort. We recommend using dry yeast as it is easy to add to the vessel. This is the phase in which you need to decide whether you would like to prepare bottom-fermented or top-fermented beer. Top-fermented yeast requires 15 to 23°C for the fermentation process, whereby bottom fermented yeast becomes active at 4 - 12°C. The amount of yeast depends on the respective recipe and the desired type of beer. Wheat beer and Kölsch are top-fermented beers. Märzen and Pils, however, are bottom-fermented beers. Alcoholic fermentation of the beer is started by the activity of beer yeast organisms, which causes the fermentable sugar to be converted into alcohol and carbon dioxide. After adding the yeast, immediately seal the container with a lid and fermentation lock. Sulphuric acid should be filled into the fermentation lock so as to ensure that no foreign organisms enter the vessel. It is imperative that you perform this work step in absolutely sterile conditions as well to prevent the beer from becoming infected by foreign organisms. The vessel may never be completely sealed to allow the CO₂ resulting from the fermentation to escape. Place the vessel in a darkened room that has the correct temperature for the yeast. A fridge that is not set too low can be used for fermentation of bottom-fermented beer. Top-fermented beers can be fermented at room temperature. For this reason, beginners are recommended to start with top-fermented beer types, as not everyone has an additional fridge at their disposal. Maintaining the temperature is extremely important. Temperatures that are too low cause the yeast cells to become active too slowly or not at all. Temperatures that are too high can lead to the yeast cells dying off. Fermentation should be active 6-12 hours after the yeast has been added; you can determine this by simply checking for escaping gas bubbles from the fermentation lock. Fermentation takes 2-4 days. Dark yeast spots may occur on the fermentation foam during the fermentation process. These can be removed by means of a sterile wooden spoon. Should you remove wort via the drainage tap during the main fermentation period (e.g. for measurements using the beer spindle), immediately clean the tap and disinfect using a cotton-wool ball and sulphuric acid where necessary. This prevents surface drying and subsequent infection by inherent bacteria during decanting.

11.9 Maturation

During secondary fermentation or maturation, all sugars remaining from the main fermentation process and added sugars are fermented – causing the green beer to build up carbon dioxide, which is of significance for subsequent formation of foam, foam stability and freshness. The beer also matures to perfection as regards taste, and a natural clarity is achieved as well. As soon as fermentation is complete (no escaping of fermentation gases), the beer can be decanted. For this, prepare the following: Prepare the maturation vessel/bottles and bring in the cooled wort to room temperature.

The most ideal option available to you is secondary fermentation in bottles, which is also the preferred method by most hobby brewers. Additional options are various pressure-resistant containers such as special 5l tins or real beer vessels and pressure vessels. Here too, it is important to work under sterile conditions. All devices must therefore be thoroughly cleaned and disinfected prior to use. When using flip-top bottles, we recommend using the following method of bottle sterilisation: Rinse and clean the bottles thoroughly with warm water. Use a suitable disinfecting agent commonly applied for food preparation equipment. This preparation should take place during in the fermentation process or earlier. This will avoid any stress at the time when filling the bottles.

The defrosted wort is then added carefully to the green beer in the fermentation vessel 1-2 hours before bottling. This allows whirled up trub to settle again. Attach a pipe that reaches the base of the bottles to the drainage tap for bottling. In this way, you can avoid extreme frothing and ensure that loss of carbon dioxide is kept to a minimum. Fill the bottles 90-95% (fermentation space) and seal immediately. Also take care not to whirl up and decant the sediment in the fermentation vessel. After bottling, store the beer for 1-2 days at the same temperature as used in the main fermentation. Then store at a low temperature where possible. Important: During secondary fermentation, it is essential to check the bottles for excess pressure after approx. 12 hours and again in the first 2-3 days, and to briefly ventilate once where required, so as to avoid excess pressure from the CO₂. Store the bottles in an upright position so that any trub can settle on the base. This type of beer production results in naturally cloudy beer. In days gone by, nutritious beer was always naturally cloudy and is today also still preferable, as it contains valuable B vitamins bonded on the yeast cells. The first tasting can take place after a storage period of 2-4 weeks. Slightly longer storage periods result in an even more mature taste.

Your home-brewed beer is now ready. Serve cold and enjoy with your friends! Cheers!

12 Brewing example/ brief instructions

The following example serves to illustrate your first brewing procedure with the Braumeister on a step-by-step basis using an actual recipe:

Beer type: Wheat beer/ top-fermented
 Beer quantity: 10 L/20 L/ 50 L ready-to-drink beer
 Original wort: 11-12°Plato

Ingredients:

- 2.5/4.5/10 kg **roughly** crushed brewing malt (50% wheat malt, 50% barley malt, and a touch of caramel malt where required)
- 15 L/30 L/60 L medium-hard brewing water or tap water (12 L/23 L/55 L to start off with and the remainder for topping up)
- 15 g/ 30 g/ 75 g hops with 4% alpha acid (approx. 2/3 immediately after start of boiling and approx. 1/3 a few minutes before end of boiling)
- Top-fermented dry yeast



Procure ingredients according to above indications.

Clean the Braumeister and place securely in brewing location.

Also clean all additional equipment required, such as malt shovel, wooden spoon, wort hydrometer, cooling coil, fermentation vessel including accessories etc,

Programming the recipe – press *Recipe* button. While in the programming mode, you can set the times, temperatures, and hops batches depending on the recipe. A suitable standard recipe is already stored. After confirming all inputs and pressing the *Select* button, the recipe will be stored. Go back by pressing *Abort* and start the Automatic mode by selecting the desired recipe in the *Brewstart* menu. The Braumeister guides you through the following brewing procedure.



Add 12 L/ 23 L/ 55 L brewing water – for 20 L to approx. 2 cm below the upper marking on the tie rod or filling level indicator.

Follow the instructions of the brew control by pressing *Select*, acknowledging that water has been added. Venting of the pump takes place automatically, followed by heating up to the programmed mashing-in temperature.



When the mashing-in temperature has been reached, a signal tone is emitted; press *Select* to acknowledge it. Then insert the malt pipe (with pulled-on seal facing downwards). Ensure that the seal is centred on the malt pipe and sits absolutely flush on the vessel base. Slide in the filter plate to the lower edge (pipe facing up). Then insert the fine sieve (position at bottom of water).

Pour 2.5/ 4.5/ 10 kg malt into the malt pipe. Ensure that no malt is spilled, as this could block the pump. Mix the malt in thoroughly using a wooden spoon and allow to swell for a few minutes. Then slide the second fine sieve onto the malt followed by the second filter plate (pipe facing up again). Position the hold-down bow and tighten well using the wing nut.



Press the *Select* button to continue the Automatic mode. Lightly coloured brewing water rises up and spills over. The cycle has begun. The next brewing phases take place fully automatically, as programmed. During some of the brewing phases, the control causes a short pump break to reposition the malt. The display shows the actual and the target temperatures as well as the target and actual run time for each phase.

After the brew phases are completed, as signal is sounded again. Press the *Select* button to acknowledge it. Remove the wing nut and hold-down bow. All parts are extremely hot. Therefore, the use of kitchen gloves is highly recommended. Rest the hold-down bow on the vessel. Pull out the malt pipe using both hands and suspend from the lower bolts in the hold-down bow. Allow the malt to drain. Use the wooden spoon to pierce the malt several times to allow the beer wort to drain more effectively. Remove the malt pipe with the malt completely after 15-20 minutes.





Continue by pressing the *Select* button in order to start the hops boiling process. Do not close the lid. Avoid the hops boiling over. Add the first hops batches of 10 g / 20 g/ 50 g 10 min after the boiling process has started. Do not close the lid during the hops boiling process either. Steam must be able to escape. Top up evaporated water quantity or adjust original wort. Add the last batch of hops 10 min before end of boiling.

Stir the hot wort thoroughly (whirlpool effect) so as to purify it from the hot break. Then immediately place the cooling coil (accessory) into the centre of the vessel. Connect the coil to cold water and allow cooling to start. Caution: Initially boiling hot water flows through the coil. Cool beer wort to 20°C. From now on ensure sterility so as to avoid infection. Allow the excreted trub to settle on the base. Avoid



Pour the wort into a sterilized 12 L/ 30 L/ 60 L fermentation vessel. Use a disinfecting agent to clean the vessel and filling equipment. Settlements at the bottom of the vessel should not be filled. Add 11 g dry yeast to the wort and seal fermentation vessel by means of the fermentation lock filled with sulphuric acid.

Remember: Fill 0.5 L/ 1.0 L/ 2.5 L wort into the vessel and store rent in a cool place (before adding yeast)

Store the container in the dark room at a temperature between 16 - 20°C The fermentation starts after approx. 12 hours Fermentation duration: 3-5 days. Fermentation is complete when no more fermentation bubbles escape. Prepare the maturation bottles while fermentation is in progress. Use a disinfecting agent to





Raise cold wort to room temperature and carefully pour into fermentation vessel, 1 hour before decanting. First remove a little foam from the top using a ladle. Do not move the vessel again before decanting. Fill into bottles, kegs or maturation vessels (accessory) using a pipe. Do not fill bottles more than 90-95%. Allow bottles to stand at even temperature for 1-2 days and ventilate briefly on a daily basis (only in case of excess pressure). Then allow the beer to mature a further 3-4 weeks at a temperature of 10-15°C.

Cheers!

Additional recipes can be found here:
www.speidels-braumeister.de



13 Brewing faults/troubleshooting

Do not repair the device yourself. Rather seek an authorised specialist. To avoid risks, defective controls/mains cables or other electrical components may only be replaced or repaired by the manufacturer, our customer service or a person with similar qualifications.

Problem when brewing:	Troubleshooting
<i>Wort fountains shoot up during circulation</i>	Malt is crushed too finely Crush malt yourself where necessary (only crack open malt)
<i>Pump blocked</i>	More thorough insertion of fine sieve/filter cloth and filter plates. Take more care when pouring into malt pipe. No malt into vessel!
<i>Pump makes noises</i>	Pump closed too tightly (hand tighten only) or not properly vented.
<i>Reaching correct temperature takes too long</i>	Close lid during heating up period. Place Braumeister in wind-protected location.
<i>Condensation forces its way out of the lid</i>	Set up Braumeister in vertical position.
<i>Circulation process does not start</i>	Check whether pump is operating and vented. Check even positioning of malt pipe on vessel base and proper sealing.
<i>Wort flows too slowly or not at all during purification</i>	Use wooden spoon to pierce malt from top to bottom filter plate several times. Malt is crushed too finely -> Break open corns only, do not grind finely.

Problem with beer:	Troubleshooting
<i>Beer smells and tastes sour</i>	Ingress of bacteria: pour beer away. Work more thoroughly in cold-process area. Brewing times possibly not long enough, therefore excess starch residue in beer. Top-up water too hot (> 80°C)
<i>Alcohol content too high</i>	Decrease original wort content by adding water during the hops boiling process.
<i>Alcohol content too low</i>	Increase original wort content by increasing boiling time (water evaporation).
<i>Various foreign odours</i>	More cleanliness. Avoid contact with mould and non-precious metals. Avoid light in beer storage area.
<i>Fermentation does not start</i>	Add more yeast. "Activate" yeast. Check fermentation temperature. Ventilate wort by stirring.
<i>Beer is cloudy</i>	Store beer for longer period. Colder conditions for secondary fermentation. Do not decant precipitate.



<i>Carbon dioxide too low</i>	<p>Too much carbon dioxide lost during decanting or through pipe.</p> <p>Freeze more wort and add prior to decanting.</p>
<i>Carbon dioxide too low – beer foams over</i>	<p>Pressure too high – ventilate flip-top bottles more frequently.</p> <p>Decanting took place too soon – fermentation was not complete.</p> <p>Too much wort added prior to decanting.</p>
<i>Poor foam stability</i>	<p>Too little carbon dioxide.</p> <p>Decrease protein rest.</p> <p>Higher temperature for mashing in.</p> <p>Remove hot break more thoroughly.</p> <p>Lower temperatures for fermentation.</p>
<i>Yield too low</i>	<p>Stir in malt more thoroughly</p> <p>Malt quantity too high; adding more malt than recommended optimal amounts leads to strongly compressed malt and poor extraction.</p>

14 Legal aspect of home brewing (valid in Germany):

Hobby brewers who produce beer in their own residence for personal consumption may produce up to 200 l beer per year, tax-free. This beer may not be sold. Hobby brewers must provide the chief customs office responsible with notification prior to starting the first brewing procedure. The following is stipulated in the Ordinance on the Implementation of the German Beer Tax Law (BierStV):

§ 2 – Production by home and hobby brewers

(1) Beer produced by home and hobby brewers in their own residences exclusively for own consumption and that is not sold is exempt from tax up to a quantity of 2 hectolitres per calendar year. Beer produced by home brewers in non-commercial communal breweries shall be deemed to have been produced in the residences of the home brewers.

(2) Home and hobby brewers are obliged to notify the chief customs office of the start of production and the production location in advance. The notification must indicate the planned quantity of beer to be produced in a calendar year. The chief customs office may grant concessions.

You can find the customs office responsible in terms of notification of your first brewing procedure at www.zoll-d.de. The customs office can be notified by fax or by letter as follows, for example:

Address of Chief Customs Office Sender	Address of Date
Notification of production of beer in private household	
Dear Sir/Madam	
I intend brewing beer for personal consumption at my above-mentioned address:	
<u>Production location:</u> (where different from Sender address)	
<u>Production date:</u>	
<u>Beer quantity:</u> 20 litres top-fermented wheat beer Original wort content approx. 11°Plato	
In calendar year XXXX I intend producing no more than 200 litres beer.	
Yours sincerely	

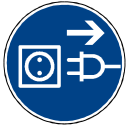


15 Brewing record

Basic data					
Date:		Start of brewing procedure – time:		End of brewing procedure – time:	
Recipe					
Malt kg – Hops g – Water l:					
Brewing procedure					
Procedure phase		Temperature		Duration	
Mashing in:					
1st Protein rest phase:					
2nd Maltose rest phase:					
3th Sugar rest 1 phase:					
4rd Sugar rest 2 phase:					
Iodine test:		Purification:		Replenishment – litres:	
ACTUAL wort gravity measurement:		°Plato:		Litres:	
TARGET wort gravity measurement:		°Plato:		Litres:	
Wort boiling:		Total duration:	1st Hop addition:	2st Hop addition:	3rd Hop addition:
Whirlpool:	Cooling:	Wort removal:	Decanting:	Wort gravity - °P:	Yeast addition:
Fermentation process/ after-fermentation process					
Start of fermentation – date:			Fermentation temperature:		
Decanting date – date:		Wort gravity - °P:	Wort addition:	Maturation vessel:	
Tasting					
Taste, colour, behaviour of foam, carbon dioxide, faults:					
Improvements					

16 Cleaning instructions

Fill with approx. 2 cm water above the heating coil and heat to ~ 35°C by means of manual control. Caution: Vent the pump by switching it on and off several times!



Then disconnect the Braumeister from the mains again.

You can now remove all brewing remnants from the inside of the container and the heating coil using a brush, ideally after each brew.



Basic cleaning also includes cleaning of the suction and pressure openings.

After cleaning the heating coil, inner wall of the container, and the suction and pressure openings, empty the Braumeister and rinse the entire container once more.

Next, the pump must be cleaned. Open the pump.

You should be able to open the pump housing by hand. If this is not the case, please loosen the housing via the screw-cap using a small square of timber and a hammer.



Now, the rotor ball in the interior of the pump becomes visible.

Caution:

The rotor ball may fall out! This may result in the failure of the pump at a later stage!

Remove the rotor ball from the housing for cleaning. Any brewing remnants must be carefully removed so as not to block the bores.



The pump housing should also be cleaned. Then place the clean rotor ball back into the housing.

Finally, tighten the screw pump again – by hand only.

Accessories Cleaning set (Item no.: 78027)





17 Guarantee conditions, handling a guarantee

Conditions:

- Statutory guarantee conditions apply. The guarantee period for users is reduced to the regulations applicable to commercial customers to the extent that they are making use of a device suitable for commercial use, including in part.
- Transmission of a copy of proof of purchase is a prerequisite for guarantee claims against us or one of our dealers. For verification of the guarantee refer to the note on handling a guarantee below.
- For quick processing of guarantee claims, please inform us immediately in writing upon noticing defects, and include a fault description and photos where applicable.
- No guarantee is given for defects due to non-adherence to the operating instructions, improper treatment or normal wear and tear of the device. Guarantee claims are also excluded in terms of brittle components or expendables such as seals or similar. Finally, guarantee claims are excluded where work is performed on the device by non-authorised parties.

Handling:

Should your device display any defects within the guarantee period, please inform us of your guarantee claim. The fastest and most convenient option is to return the device or the notice of defect to the dealer/agent responsible or directly to us:

email: **verkauf@speidel-behaelter.de**

or fax to: **0049 7473 9462 99**

Please provide us with your **full address including contact details**. In addition, we require the **type designation** of the device in question, a short **fault description including photos, where applicable, the purchase date (copy of invoice)** and the **dealer** from whom you purchased the new device.

After verifying your notification of defect, we will contact you as soon as possible to agree the next step. Please, under no circumstances, send us your device by Carriage Forward.







de	Sollte die beiliegende Betriebsanleitung nicht in einer für Sie verständlichen Sprache vorliegen, so kontaktieren Sie diesbezüglich bitte Ihren zuständigen Händler.
en	If you don't have a manual in any comprehensible language, please contact your local dealer or distributor.
fr	Si les instructions accompagnant dans une langue qu'ils comprennent, vous donc s'il vous plaît contacter votre revendeur local.
es	Si las instrucciones que acompañan estar en un idioma que comprendan, que por favor contacte a su distribuidor local.
pt	Se as instruções que acompanham estar em uma linguagem que eles entendem, você por favor contacte o seu revendedor local.
pl	Jeśli instrukcje towarzyszące są w języku, który rozumieją, tak, proszę skontaktuj się z lokalnym dealerem.
no	Hvis instruksjonene som følger med være på et språk de forstår, du så ta kontakt med din lokale forhandler.
fi	Jos ohjeet mukana olevan he ymmärtävät, olet niin ota yhteyttä paikalliseen jälleenmyyjään.
sv	Om instruktioner vara på ett språk de förstår, behåga dig så kontakta din lokala återförsäljare.
da	Hvis anvisningerne ledsager være på et sprog, de forstår, så du bedes kontakte din lokale forhandler.
it	Se le istruzioni che accompagnano in una lingua che capiscono, ti prego pertanto di contattare il rivenditore locale.
el	Εάν οι οδηγίες που συνοδεύουν να είναι σε γλώσσα που κατανοούν, σας γι 'αυτό παρακαλώ επικοινωνήστε με τον τοπικό σας αντιπρόσωπο.
hu	Ha a mellékelt használati utasításnak kell olyan nyelven, amit megértenek, akkor ezért kérjük, forduljon a helyi forgalmazóhoz.
nl	Als de instructies die bij in een taal die zij begrijpen, je zo kunt u contact opnemen met uw lokale dealer.
ro	Dacă vă lipsește manualul de instrucțiuni într-un limbaj accesibil, vă rugăm să contactați distribuitorul local
ru	Если Вы не нашли инструкцию на доступном Вам языке, пожалуйста свяжитесь с вашим местным диллером или дистрибьютором.
sk	Ak Návodý priloženej byť v jazyku, ktorému rozumie, si tak obráťte sa na miestneho predajcu.
sl	Če navodila, ki spremljajo, so v jeziku, ki ga razumejo, zato vas prosimo, obrnite na lokalnega prodajalca.
bg	Ако инструкциите, придружаващи се в разбираем за тях език, можете да се обърнете към местния дилър.
sr	Ако се прате упутства бити на језику који они разумеју, тако да вас молимо да се обратите свом локалном дистрибутеру.
hr	Ako upute prate se u jeziku koji razumiju, pa vas molimo da se obratite svojem lokalnom zastupniku.
cs	Pokud Návodý přiložené být v jazyce, kterému rozumí, jsi tak obraťte se na místního prodejce.
tr	talimatları anladıkları bir dilde olması eşlik ederseniz, bu nedenle yerel satıcınıza başvurun.
zh	如果指示随行在他们理解的语言，所以请您联系当地的经销商。
ja	命令は、彼らが理解できる言語になるに伴う場合は、そのお近くの販売店に連絡してください。
ko	지침 그들이 이해하는 언어에 동행하는 경우, 당신은 귀하의 지역 대리점에 문의하시기 바랍니다.
th	หากคำแนะนำการประกอบอยู่ในภาษาที่พวกเขาเข้าใจคุณดั่งนั้นโปรดติดต่อตัวแทนจำหน่ายในประเทศของคุณ
vi	Nếu các hướng dẫn đi kèm có trong một ngôn ngữ mà họ hiểu, bạn nên xin vui lòng liên hệ đại lý địa phương của bạn.