



# FAQS

# HOPS

## **WILL MY FILTER GET BLOCKED UP WITH HOPS?**

If you are worried that the pump filter might get clogged, you can put your mind at ease – with our numerous trials and vigorous testing we have put the Grainfather through, this has never happened and we have tested batches with extremely large hop bills.

- We recommend making a ‘whirlpool’ prior to chilling which simply means using your paddle to stir the wort in a circular motion. This creates a centrifuge effect and causes the hops to drop from suspension down towards the filter, creating a secondary, natural hop filter.
- We have designed the Grainfather and the filter so that you do not need to use hop socks or hop spiders. Please note, you should only be concerned if your recirculation actually stops – not if it slows. There is no real issue with hop bags or spiders if you wish (though you may experience reduced utilisation) but when you use loose hops they form an extra filtration layer around the pump filter which can help produce clearer wort and you often retain much more hop character in your beer.



## **WHAT FORM OF HOPS SHOULD I BE USING IN THE GRAINFATHER?**

- Pellets, whole cones and flowers are suitable for use with the Grainfather.
- Plugs however are designed for cask dry hopping rather than brewhouse additions so we recommend only adding these as a dry hop addition.

## **DO I NEED TO USE A HOP SPIDER OR HOP SOCK?**

To get the most flavor out of your hops they do need to undergo some level of churning and be in contact with the wort. Using hop socks or hop spiders may actually negatively affect hop utilisation/IBU simply because less surface area will be exposed to the wort.

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# EQUIPMENT SET UP

## HOW CAN I KEEP MY PERFORATED PLATE SEALS FROM COMING OFF WHEN I PUT THE PLATES IN?

There are seals because it is important that the plate is tight on the inside of the basket but this can happen if you try to insert the plates dry.

- Try dipping them into water before inserting. When you are filling grain into the basket it gets dusty on the sides – this grain flour will also help the plates to slide down easily without the seals coming off. You could even sprinkle grain dust on the seal before inserting.
- It is also a good idea to ease them in on an angle and then straighten up to make it easier.

## MY PUMP IS NOT RUNNING 100%, IT'S MAKING A HUMMING NOISE, WHAT'S WRONG?

It could be one of two reasons;

1. The pump has become blocked – did you use the cap or the grain stopper on the overflow pipe when you mashed in? If not, some grain may have gotten into the pipe and may be causing the blockage.
2. You may have an airlock – this is caused by gas being trapped in the pipe.

For either of these issues we would recommend fixing a hose to your discharge pipe and forcing water back down the pipe to push out any blockages. Once you have done this fill the unit with water and try the pump again. If this still does not work let us know by giving us a quick call or email and we will guide you through the next course of action.

## WHAT IS THE BEST CLEANER TO CLEAN THE GRAINFATHER WITH AFTER EACH USE?

- We recommend using the Grainfather High Performance Cleaner as this has been developed and specifically tested for use with the Grainfather and its soft and hard metals.
- If Grainfather High Performance Cleaner is not available, use a non corrosive, alkaline cleaner such as PBW. Avoid cleaners high in acid and avoid common household bleach.

## WHERE AND HOW CAN I GET SPARE PARTS OR UPGRADES?

If you require spare parts or upgrades you can request these from your local retailer.



# HEATING, BOILING AND THE ELEMENT

## I HAVE A LOT OF FOAM FORMING DURING THE BOIL, IS THIS NORMAL?

Yes, as your wort comes to the boil foam will appear.

- You should use your paddle to pat it down otherwise foam will start to rise and form a smooth surface.
- If the foam suddenly overflows, this is a boil over. If it looks like it is going to boil over, either lower the heat or spray the surface with water from a spray bottle. The foam is caused by proteins in the wort coagulating due to the rolling action of the boil.
- To try and prevent this you should make sure to stir when bringing the wort to the boil and occasionally while boiling.

## HOW LONG SHOULD IT TAKE TO GET A DECENT ROLLING BOIL?

It should take 20-30 minutes from sparging when using the 220-240v unit or 45 minutes with the 110v unit.

- One tip is to switch the Grainfather to boil while you are doing the sparge in order to speed up the time it takes to get to the boil. By the time you finish the sparge the Grainfather should be just about at boiling point. Be sure that it does not reach boiling point while your grain basket is still sitting on top.



## WHY IS MY CONTROL BOX ONLY SHOWING 98°C (208°F) DURING THE BOIL AND NOT GOING ANY HIGHER?

It is worth noting that the control box is bypassed when you switch to boil so you shouldn't worry as long as you can see the wort is boiling.

## WHY IS MY HEATING ELEMENT NOT WORKING? IT'S NOT HEATING AT ALL.

The Grainfather features a boil dry protection system (safety cut out) which will automatically switch off the element if the water level is too low.

- To reset the safety cut out, switch the Grainfather off and unplug the unit. Empty out any liquid and press the reset button located at the bottom, underneath the boiler.
- It is important to scrub the bottom of your Grainfather when cleaning if there is anything stuck to it. If you do not then any spots of proteins may create heat spots, also causing the Grainfather to cut out. It is best to gently scrape the element every now and then during the boiling process to minimise protein build up.

## I HAVE NOTICED THAT MY ELEMENT HAS SOME BURNT MATERIAL ON IT – IS THIS NORMAL?

Protein build up is quite normal during the brewing process, the Grainfather High Performance Cleaner is specifically designed to remove burnt on proteins.

- Fill the boiler up with 7.5 L (1.98 US Gal) of water. Add 30 ml (1 US fl oz) of Grainfather cleaner (if using another cleaner, use as directed on the cleaner instructions); remember to set the temperature to 55°C (131°F). See details under the cleaning section of the Grainfather manual.
- Also don't be scared to give the bottom and sides a good scrub with a soft bristle brush. If need be you can increase the temperature to 65°C (149°F) and soak for 30 minutes to soften the buildup. It is best to scrape the element every now and then during the boiling process to minimise protein build up.

## WHAT IS THE BOIL OFF RATE?

- For 220v units the boil off is 2 L/hour. For 120v units the boil off is 0.4 US Gal/hour. This is around 7%/hour which is in line with commercial breweries.

## WHY IS MY CONTROL BOX NOT DISPLAYING THE RIGHT TEMPERATURE?

This could be for a couple of reasons.

- You should first check that the cord from the pump and the cord from the element are plugged into the control box fully the correct way around. You should then check that the temp probe is pushed fully into the thermowell and sits tight. If this still does not work let us know by giving us a quick call or email and we will guide you through the next course of action.

# GRAINS AND MASHING

## **CAN I STEP MASH IN THE GRAINFATHER**

Yes, this is a simple process of changing the temperature at certain intervals during the mash. The steps generally start with a protein rest and end with a saccharification rest. This method is used to achieve different characteristics in a beer. Follow your recipe instructions for your mash schedule.

## **DO I REALLY NEED TO PERFORM A MASH OUT?**

The mash out step stops all of the enzymatic action (preserving your fermentation sugar profile) and makes your grain bed and wort more fluid. A mash out may prevent a stuck sparge by making the sugars more fluid. We recommend doing this but a lot of homebrewers tend to skip the mash out step for most mashes with no consequences.

## **WHAT IS THE MINIMUM GRAIN BILL I CAN BREW WITH?**

You can use smaller grain bills but you need to make adjustments to your water calculations if you are using a grain bill below 4.5 kg (10 lbs).

- Please use our brewing calculators to work this out ([www.grainfather.com](http://www.grainfather.com)) or the specific instructions in your manual for small grain bills.
- We wouldn't advise going lower than 2.5 kg (5.5 lbs) of grain. The overflow pipework only goes down to a certain point. The top plate is designed to fit into the overflow inlet which sits on the overflow pipework. So, this means the top plate only goes down as far as the overflow pipework does. This means, with a smaller amount of grain (less than 4.5 kg/5.5 lbs) the top plate will sit a bit higher than the grain bed. You will need to fill it with more water until you see the water reach the top plate. Be sure to record this extra water amount and change your calculation as appropriate as you will need to reduce your sparge volume by this amount.
- Or alternatively you can use the micro pipework available designed specifically for small grain bills. You should use the standard calculations when using this pipework.

## **WHAT IS THE MAXIMUM GRAIN BILL I CAN BREW WITH?**

The maximum is 9 kg (20 lbs). With a grain bill this size the key is to add the grain very slowly while stirring to avoid dough balls forming. Because there is more grain it will also take a bit longer to gelatinise. You can try and add half of the grain, recirculate and then add the other half.

Do this by;

- Pouring in half your grain, slowly stir and then attach your recirculation pipe.
- Do not add the top perforated plate at this stage, start to recirculate making sure that nothing goes through the overflow pipe.
- Recirculate until the grain level goes down. The grains will start to gelatinise.
- Once the level has gone down, add the other half of your grain bill – fit the top perforated plate and recirculation pipe and recirculate as normal.

## **CAN I BREW DIFFERENT BATCH VOLUMES?**

Yes you can. You will need to ensure you are entering the correct figures in the formula for your water calculations or use our brewing calculators. We also have micro pipework available if you're wanting to make volumes of 10 L (2.6 US Gal) or less.

# GRAINS AND MASHING CONT.

## WHAT IS THE CORRECT SIZED GRAIN CRUSH? AND IS THIS IMPORTANT?

Milling increases the surface area of the grain, making the starch more accessible and separates the seed from the husk.

- Care must be taken when milling to ensure that the starch reserves are sufficiently milled, without damaging the husk, and providing coarse enough grits so that a good filter bed can be formed during sparging. We recommend a medium sized crush for the Grainfather. Each mill will be different so it is best to check the individual mill's settings. Roller mills also tend to keep the husk more intact while still crushing the grain effectively.
- The ideal grain bed will have intact grain husks as this will ensure water permeability. If you have too much "fines" it can cause the grain bed to be impermeable – causing the sugars to get trapped.
- It is important that the grain used for brewing is crushed to the correct consistency. If the grain is not crushed enough, not enough of the starches will be available for the enzymes to work. If the grain is over crushed water will not be able to correctly flow through the grain and this can cause a 'stuck' mash.

## WHAT SHOULD I DO TO PREVENT A STUCK MASH AND SPARGE?

- Make sure your water calculations are correct for the Grainfather and that your grain is the correct size crush.
- If it is crushed too fine you will end up with a porridge-like mixture which won't allow water to flow through. An ideal milling will break the internal bits of grain into a coarse powder while still leaving the bulk of the husks intact. The husks will form the filter bed for your sparge. It is also important to sparge slowly and perform a mash out.

## WHAT SHOULD I DO IF I HAVE A STUCK MASH AND/OR SPARGE?

Give the grain bed a gentle stir with your paddle; try to keep the grain bed intact as much as possible.

## MY WORT IS FLOWING THROUGH THE RECIRCULATION PIPE, IS THIS BAD? DOES THIS MEAN I HAVE A STUCK MASH?

This is fine and will happen occasionally and is nothing to worry about. The reason it happens is because different grains and crushes have different consistencies. We have put this pipe here for this reason – to make sure wort is always recirculating and reaching the element to maintain a constant temperature throughout the wort. We have tested it and even if your wort overflows your brew will not be compromised.

You may find that it is recirculating through the pipe a lot and quickly at first and then slows and settles after a while. This is good. It means that at first the malt is hard for the water to push through, but eventually as parts break down the water will flow more freely through the grain bed than the recirculation pipe.

## WHAT GRAINS ARE SUITABLE TO BE USED?

- There are many grains suitable for use when brewing, malted barley oats and wheat are some of the most common.
- When using the Grainfather, the crush of the grain is what is important – we recommend a crush of 1.27 – 1.4 mm (0.05 – 0.16") for best results.
- Using a lot of wheat or oats in your mash results in a high amount of 'beta glucans' which can create a gummy consistency in your mash. This can lead to stuck mashes or sparges. If you are using a high percentage of oats and grains we would recommend utilising a beta glucan rest in your mash profile (30 minutes at 40°C/104°F).

# SPARGING

## **CAN I SKIP THE SPARGING STEP?**

We always recommend to sparge as this will allow you to extract as much of the sugars from the grain as possible – giving you a higher gravity and greater efficiency.

- You can choose to leave this step out but you will end up with a lower gravity beer.
- If you want to end up with the same gravity as you would have when you sparged you will need to add 20-25% more grain.

## **HOW LONG SHOULD SPARGING TAKE?**

20-30 minutes depending on the type of grain that you're using. This should not be rushed – the longer the better generally.

## **WHY DOES MY SPARGE WATER NEED TO BE A SPECIFIC TEMPERATURE?**

It is generally accepted that up to a point, the hotter your sparge water the better or more efficient. This is generally agreed to be around 75°C (167°F). Above this temperature and tannins from the grain husks become soluble enough to be rinsed into the grain. There has recently been some research to suggest that cold sparging has no negative effect on efficiency (though it may result in poorer wort clarity).

# COOLING

## **WHY DOES WORT COME OUT IN SPURTS DURING COOLING?**

Air sometimes gets trapped in the pump impeller causing an air bubble.

- Turning the pump off and on again will remove the air bubble.
- It is good to quickly test the pump before you start the mash. This can be done with the initial mash water.

## **WHY IS IT TAKING SO LONG TO COOL MY WORT?**

For effective cooling you should be running the wort directly into your fermenter – do not recirculate back into the Grainfather. Recirculation is only required for the first 5 minutes of the cooling process to sterilise the inside of the chiller, after this you can transfer the cool wort out hose to your fermenter as soon as it is cold to the touch.

## **WHAT DO I DO IF MY RECIRCULATION IS BLOCKED?**

If recirculation comes to a complete stop:

- Turn off your pump and remove the recirculation arm.
- Carefully unscrew the ball valve from the top of the recirculation pipe (the ball and spring are contained within so be careful not to lose these).
- Check the inside for any obvious blockages and remove this. You can also check down the recirculation pipe.
- Once any obvious blockage has been removed, reattach the ball valve and recirculation arm and start your pump again.

# CLEANING

## **WHAT DO I CLEAN THE GRAINFATHER WITH?**

The Grainfather High Performance Cleaner is a CIP (Clean In Place) cleaner specifically formulated to work with hard and soft metals that the Grainfather and the counter flow wort chiller both include. If you cannot get hold of this PBW is a suitable alternative.

The high performance cleaner is specifically designed to remove burnt on proteins.

- Fill the boiler up with 7.5 L of water. Add 30 ml of Grainfather cleaner (if using another cleaner, use as directed on the cleaner instructions); remember to set the temperature to 55°C (131°F). See details under the cleaning section of the Grainfather manual.

## **I HAVE REALLY BADLY BURNT ON PROTEIN RESIDUE ON THE BOTTOM OF MY BOILER, HOW DO I CLEAN THIS?**

Protein build up is quite normal during the brewing process, the Grainfather High Performance Cleaner is specifically designed to remove burnt on proteins.

If using another cleaner, use as directed on the cleaner.

- Don't be scared to give the bottom and sides a good scrub with a soft bristle brush, if need be you can also increase the cleaning temperature of the Grainfather to 65°C and soak for 30 minutes to soften the build up. It is best to scrape the element every now and then during the boiling process to minimise protein build up.

# EFFICIENCY

## **WHY DID I GET A LOW STARCH TO SUGAR CONVERSION?**

This could be due to a few factors;

- Incorrect grain crush
- Diastatic properties of the grain bill
- Incorrect mash temperature
- Wrong mash time
- Incorrect mash water pH
- Incorrect mash water calculations
- Mash thickness

## **WHAT EFFICIENCIES CAN I EXPECT FROM THE GRAINFATHER?**

This depends a lot on your grain bill, grain crush and recipe. In general we can say that our brewers have experienced efficiencies of up to 85% when using the Grainfather.

## **WHAT SHOULD I DO IF I COLLECT TOO MUCH WORT?**

You can boil for longer and boil some of this off so more water will evaporate, giving you a higher OG.

## **WHAT SHOULD I DO IF I DON'T COLLECT ENOUGH WORT?**

Top up the boiler with water but be aware of the changes you will get to your OG.



# FERMENTATION

## **I CAN'T SEE BUBBLING IN MY AIRLOCK, IS IT FERMENTING PROPERLY?**

The purpose of the airlock is to allow CO<sub>2</sub> produced during fermentation to escape without allowing anything into your beer. Whilst bubbling can be an indication of active fermentation a lack of bubbling does not mean that fermentation is not occurring. To be sure of fermentation we recommend using a hydrometer.

# GENERAL

## **WHAT IS THE WARRANTY ON THIS PRODUCT?**

We offer a 12 month warranty on the Grainfather which you can activate online.



[www.grainfather.com](http://www.grainfather.com)