

# BREWING BEER FOR BEGINNERS





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# INTRODUCTION

Brewing your own beer is an enjoyable and rewarding experience. The quality of kits, ingredients, and equipment has come on in leaps and bounds, and today it is easy to make beers and ciders which are comparable to their commercial equivalents. You will also save money too, as even the most expensive kits will produce fantastic tasting beer at under £1 a pint (most kits will cost around 50p per pint to produce). The proliferation of home bars and an increased trend for drinking at home, post-covid, has made craft brewing at home an attractive choice. Styles and flavours of beers and ciders continue to expand so you should easily find a drink which becomes your 'go to' favourite.

Brewing Beer (Cider is brewed in much the same way) is a very easy process and you do not need any skills to get started.

There are a few basic rules to ensure you achieve consistently delicious drinks, which we will explore in this guide. As you gain experience you can experiment with different kits and techniques and perhaps work up to all-grain brewing.



All-grain brewing requires more time and investment in equipment, so many brewers are happy to stick with kits. The choice is yours.

We have been advising brewers through our retail shop since 1971 so we have covered pretty much all topics and questions. Home-brew retailing has changed since covid lockdowns, and many brewers now buy and interact online. We continue to offer a high level of customer service online and we support the Facebook group Pure Brew. This can be accessed through our Dark Rock website. It is a free resource and consists of over 1000 members, many of which are CAMRA officials, commercial craft brewers, and home brewers with considerable experience. Unlike some forums, the group is both knowledgeable and friendly, and members are keen to share experiences and advice. This is a great port of call for new brewers who may have a variety of questions they need answers to.

Although there is a great choice of supplies online, and forums to support you, we would recommend visiting a good physical retail shop from time to time. You will find out about new products that are coming to market and get the chance to talk with people that have a lot of experience in the hobby. In our shop, we offer tasting sessions on Friday afternoons and Saturday mornings, where brewers can sample new kits and beer styles, and discuss ideas. We offer a great choice of bar and dispensing equipment too, to enhance your drinking experience. Setting up your own bar is a great fun and the savings you can make will go some way to offset the cost of living and energy price hikes we are currently experiencing.

So, let's jump in and start making great beer to share at home with friends and family.



# BEER KITS

Before choosing equipment, it is worth considering the style and type of beer you are going to make. We recommend new craft brewers start with a basic beer kit. Choice of Beer kits can be thought of like an elevator. The starting point is a Basic beer kit. These will cost £12-£15 and will be easy to make.



They should ferment in around one week and be ready to drink in 3 weeks. Basic kits will require the addition of around 1kg sugar to reach an alcohol level (known as ABV-Alcohol by Volume) of around 4.5%. The quality of the kit can be further improved by using a beer enhancer (part brewing sugar, part malt extract) rather than just sugar.

**Premium Kits** tend to contain more hopped malt extract (up to 3kg) and often have a separate pack of dry hop pellets which are added to the fermenting beer.



This will provide an enhanced hop aroma and taste in the final beer. They are slightly more expensive (typically £25 - £30) but will only require the same equipment to produce as a basic kit. They may have a slightly higher ABV and take a little longer to ferment, 10-14 days.

**Part-Grain** Kits take your brewing to another level. They contain 3kg of unhopped commercial grade malt extract, so no extra sugar is required to brew the beers. These kits contain everything you need to make commercial quality beers and many styles are designed to clone your commercial favourites.



These kits include a separate bag of malt grains and fresh hop additions, to subtly adjust the flavours. They also include high quality yeasts, finings to clear the beer, and yeast nutrient/water treatments to ensure the purest flavours. Part-grain kits are easy to make and ferment out in 10-14 days. They only take around an hour to make and you will be drinking beer which is every drop as good as their commercial equivalent in around 3-4 weeks. Part-grain kits offer a much wider choice of styles including several commercial clones. Costs vary from £27.50 according to the types and amount of hops included. You will only need a 15-litre boiling pan and thermometer in addition to basic equipment to brew these beers. We recommend purchasing a nano-starter kit if you want to aspire to part-grain kit brewing.

**All-Grain Kits** exist at the top of the brewing elevator. They are made in the same way as a commercial brew would be using scaled down equipment. All-grain kits take longer to brew (typically 3-4 hours) and give the ultimate results.



There are a wide range of flavours and styles, and it is possible to tweak the ingredients to achieve individual preferences. The fermentation times are roughly the same as for part-grain kits, but the final beer may be ready to drink a few days earlier. All-grain kits cost less than part-grain kits (typically from £22.50 for a good quality kit) but they do require more specialist brewing equipment.

The brewing process needs to be precisely followed and water temperatures need to be maintained throughout. Therefore, most all-grain brewers now use specialist brewing equipment such as the all-in-one Grainfather brewing system.

We would recommend that new brewers start lower down the brewing elevator and aspire to all grain brewing once basic skills and knowledge have been developed..





# EQUIPMENT

The golden rule is to always buy good quality equipment from a reputable home brew retailer. Based on fifty years of experience, we have assembled starter kits which contain everything you need to brew your chosen style of beer. We only select food grade plastic, and all our equipment is reliable and robust, to give you years of excellent service.



Our Basic Starter kit includes everything you need to get started brewing basic or premium beer (or cider) kits. You can then build on this equipment base as you advance with the hobby. You will need to buy either bottles or a keg to store the beer or cider in once it is made.

If you want a comprehensive level of equipment to begin your brewing journey, then we would recommend either the Master Your Craft Deluxe Beer Making Starter Kit or the Nano Starter Kit.



These include everything you will need to brew all styles of beer up to and including Part-Grain Kits. The nano-starter kit also includes a boiling pan and hop spider (to retain hop additions in the brewing process). The nano-starter kit would also be appropriate for all-grain brewing with the addition of an all-in-one brewing machine such as the Grainfather.

These starter kits include your first brew and even include a heating pad to ensure that your beer ferments at a constant temperature, whatever time of year you are brewing.

The nano starter kit represents excellent value as a complete equipment bundle. A 'what's in the box' guide to the starter kits is illustrated at the bottom of this guide.

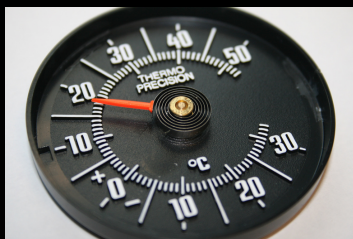


# PREPARING TO BREW A BASIC BEER OR CIDER KIT

In our experience there are two areas to focus on to ensure that you get consistently great results from your brewing process.

Firstly, sanitise everything prior to use. By far the biggest failure of beers is through poor sanitisation of equipment.

The second important area to focus on is temperature and monitoring the fermentation. It is important to store the beer in a room at an appropriate constant temperature to ensure a healthy fermentation.



The kit instructions or yeast pack provided will state the correct fermentation temperature (this may vary according to the yeast). If the room is under 20C you may need to put a heat pad under the fermentation bucket.

If the room temperature is higher than 24C you may need to find a cooler place. When the fermentation is finished try to complete the bottling/kegging process as soon as possible. Whilst fermentation is progressing the beer will produce a layer of CO<sub>2</sub> which will keep airborne bacteria at bay. Once fermentation finishes this will stop so it is advisable then to bottle or keg the beer as soon as possible to avoid the subsequent risk of airborne contamination. Try to avoid frequently lifting off the lid of your fermenter during fermentation as this can introduce airborne bacteria into the beer.

Your starter pack will include some Suresan no-rinse sanitiser. This is a very kind routine sanitiser that can be used on all equipment including stainless steel. It is a contact sanitiser. Simply mix a spoonful of Suresan into approximately 1 litre of warm water. Then swill the solution around your bucket and immerse other equipment such as spoons, syphon tubes etc in the solution.



You may wish to use a sponge to ensure all surfaces that will be in contact with the beer are sanitised. Discard the solution following use as it is neutralised after 1 hour. Drain the solution from the equipment (many brewers give equipment a quick rinse under the tap to remove all the sanitiser, but this is not necessary). Your equipment is now ready for immediate use.

# BREWING A KIT

The most popular choice of beer kits that we sell are the Dark Rock Session Series. These contain 1.8kg of premium hopped malt extract. The kit also contains a high-quality beer yeast and a sachet of dry hops. There is also a phial of hop boost powder included to ensure great results.



Most customers choose to use a Dark Rock (style matched) Beer Enhancer pack to ensure the best possible results. The Dark Rock Beer Enhancer contains a mix of brewing sugar and Malt Extract plus a sachet of Pure Brew.



Pure Brew is a blend of nutrient salts together with Vit C and Zinc which neutralises any Chloramine or Chlorine in the tap water you will use. This is a fundamental cause of what used to be called the 'homebrew taste'. When yeast ferments it produces phenols. If chloramine or chlorine is present in the water this can cause chlorophenols to be produced instead.

The resulting taste has been described as plasters, hints of TCP, or metallic after taste. Commercial brewers avoid this problem by using osmotic water filters to eliminate chlorine and chloramine. This is not a cost-effective option for most home brewers. By using Pure Brew, pure commercial results will be achieved. Therefore, we recommend adding Pure Brew to any beer you make. It is sold in all good home brew shops.

To brew a Dark Rock Session kit simply open the can and stand it in a saucepan of hot water for a few minutes to thin the malt extract. Then pour the contents into a sanitised 22l (5gallon) fermenter. Most kits make 5 gallons/40 pints of beer (22 litres). Pour a kettleful of boiling water over the malt extract (flush out the can with it to retrieve any remaining malt extract) and stir well with a sanitised long handled spoon, until the malt extract is thoroughly dissolved. Then add the beer enhancer pack (not the pure brew sachet though) and again stir well to dissolve. Add more boiling water if necessary. If you are not using a beer enhancer pack, you will need to add 1kg sugar. If using sugar, we recommend using brewing sugar (Dextrose Monohydrate). This provides a stronger, more efficient fermentation, and a better overall flavour than conventional sugar.

Once the mix is dissolved, top up to 40 pints (marked on your fermenter) with cold tap water. At this point it is useful to measure the starting Original Gravity (OG) of your beer. Simply sanitise the hydrometer and drop into the beer. If bubbles cluster around it, give the hydrometer a quick spin to move them away, then read the level of the beer and make a note. There is a guide to using a hydrometer at the end of these instructions.

Your Dark Rock fermenting bucket is provided with an LCD thermometer (the nano starter kit also has a digital probe thermometer). Wait until the temperature is 20C-22C then sprinkle the sachet of yeast on the top of the beer and the dose of Pure Brew. Then vigorously stir the beer backwards and forwards for a minimum of 2 minutes to achieve as much oxygen/aeration as possible. The more oxygen the better as this will support the fermentation. Then snap the lid on and fit the airlock (fill water into the airlock under a tap for a second or two before fitting).

Leave the bucket in a place at the correct temperature (normally 20-22C but check kit or yeast sachet instructions) to ferment. It is important to try to keep the beer at a constant correct temperature during fermentation. Try to avoid fluctuations and temperature spikes as this can affect the final taste.

A heating pad (provided with the deluxe and nano starter kits) will raise the beer temperature to around 7 degrees C above ambient room temperature. This may be necessary during winter months. In hot summer periods try to ferment in a cooler room if necessary.



After 6-12 hours a foam will form on the beer and CO<sub>2</sub> will escape through the airlock. This is a visible sign that fermentation is progressing (a process technically known as attenuation). This will be vigorous at the start and slow down after a few days. Avoid frequently opening the lid of your bucket as much as possible. When you aerate the beer at the start, Oxygen is your friend. After attenuation has started it is your enemy! Fermentation should have finished when bubbles stop coming through the airlock (or are very infrequent) and the hydrometer reading remains stable for a couple of days. Towards the end of fermentation quickly remove the lid from your bucket and take a hydrometer reading (sanitise the hydrometer first). For a session Kit the Final Specific Gravity (FG) should be around 1010 on your hydrometer. Occasionally this may be slightly lower. Note: For kits with more malt extract such as part-grain kits the expected final gravity may be higher 1012-1014.

Kit instructions will give a target ABV, but It is possible to determine the actual alcohol content of your beer by taking the starting Original Gravity (OG) and Final Gravity (FG). The calculation is  $OG - FG = \text{the drop}$ . Divide the drop by 7.36 and this will give you the correct ABV for your beer.



Now add the sachet of dry hops into the beer. This will provide a delicious hoppy aroma and final subtle hop flavours. Unless you prefer a cloudy beer, we also recommend adding a measure of Starbrite beer finings at this stage.

This will help the beer to clear and reduce any sediment in the final bottles or keg. Snap down the lid and keep the bucket as cool as possible (ideally around 5C but this may not be achievable outside winter months without a kegerator fridge). This will crash chill the beer and promote clearing.

After two days you are now ready to keg or bottle the beer. The equipment kit will contain a syphon kit. One end will have a flow control clip which you can use to reduce or stop the flow. The other end will have a rigid tube with a sediment trap at the bottom. This prevents yeast sediment from being sucked from the bottom of your bucket and into the bottles/keg. There is also a bucket clip to conveniently attach the rigid end of the tube to the bucket. Sanitise the syphon before use. Then place the bucket on a higher-level work surface and your sanitised bottles or keg underneath. Fit the rigid end of the tube with sediment trap into the bucket and suck the beer to prime the tube. Once filled, close the control valve then position the open end over bottles/keg. Release the clip to start filling (it can be quickly reclosed as necessary between bottles).



Carefully syphon out all the beer avoiding disturbing the sediment. Towards the bottom carefully tilt the bucket to retrieve as much of the clear beer as possible. The final sediment can be discarded.

If you are bottling your beer, make sure you use bottles that have previously held fizzy drinks or preferably purchase two boxes (48) 500ml PET Beer bottles. Add 2 brew fizz carbonation drops to each bottle and leave approx. 2 cm at the top of the bottle for air space. Half a teaspoon of granulated sugar could be added to each bottle if brew fizz tablets are not available.



Screw the bottle tops down and place the bottles in a warm place (22C) for around 5 days to build pressure (this is known as secondary fermentation). Then store in a cool place for a minimum of 2 weeks to clear and condition before drinking.

If you intend to keg your beer in a plastic keg, syphon the beer into the barrel (sanitise it first) and add 100g of granulated sugar dissolved in a little boiling water. Lock down the cap and store in a warm pace (22C) for 5 days. Then place the barrel in a cool area for 2 weeks to condition and clear before drinking.





If you are using a Cornelius (Corny) Keg, these are designed to be force carbonated rather than following a conventional secondary fermentation. Syphon your beer into the Corny keg then attach a gas disconnect fitted to a conventional CO2 pub gas bottle/regulator with John Guest beer line. Open the gas bottle and regulate the pressure to 25psi. Purge the Corny gas relief spring valve a couple of times to get rid of any air. This will leave only CO2 over the beer. Leave the keg at 25psi in a cool place (ideally in a kegerator fridge) for 1 week to force carbonate the beer.

Then reduce the pressure to around 5psi to pour and release the Corny valve to reduce the tank pressure to 5psi. The beer is now ready for drinking. As the Corny draw tube is close to the bottom of the keg your first pint or two may be a little cloudy as any residual sediment is pulled up. It is perfectly ok to drink this although later pints should be clearer.

These instructions illustrate how to make a Dark Rock Session Beer, which is the range we recommend for your first attempt. There are several styles to choose from, including Amber Bitters, Lagers, and IPA's. The brewing process will be similar for other beers, simply follow the instructions provided with the kit. Part-grain kits follow a slightly different process before the fermentation but are still easy to make. Just follow the instructions provided with the kit. If you want to progress to all-grain brewing, we recommend speaking to a member of our team to discuss the process and equipment requirements.

# STORING YOUR BEER OR CIDER

Starter kits will provide all the necessary equipment brew your beer. They tend not to include final storage solutions as this is a personal choice. Your first decision will primarily be whether to bottle your beer or keg it. In our retail shop, we normally advise customers to start by bottling their initial beers. The process is relatively cost effective, simple to undertake, and it is easy to store bottles in a fridge, to share them with family and friends. However, you may prefer to keg your beer for a lower carbonated draught beer or for faster kegging. Most brewers will eventually operate a mixed system, perhaps bottling higher alcohol and specialist festive beers, which are drunk more infrequently.

## **Bottling.**

A range of high-quality purpose made beer/cider bottles are available from good home brew retailers. They are available in glass or plastic, and both are suitable for all brews.



The preferred size tends to be 500ml as this allows a pint to be carefully poured without disturbing the sediment. Litre bottles are less popular but 330ml glass bottles are often chosen to serve specialist and high ABV beers. You may choose to collect and clean pre-used bottles. If this is the case it is important only to use bottles which have previously held fizzy drinks, and make sure that the caps are tight enough to prevent leakage. If you intend to bottle it is worth considering investing in a bottle washer and drainer. This makes cleaning/sanitising a batch of bottles very fast and easy.

Sanitise all bottles before use. Add 2 Brew Fizz carbonation drops to each bottle and then fill with beer to 2 cm from the top using your syphon tube and flow control valve. You may consider purchasing and fitting a tap and bottle filling tube to your bucket to speed up the bottle filling process. These are sold as accessories.

Once bottles are filled, secure the cap and store them in a warm place for 5 days. This will allow a secondary fermentation to take place which will carbonate your beer. A small sediment will form on the bottom of bottles, but this is normal. If you have used Finings, then the sediment should stick to the bottom of the bottle to a greater extent and the beer should be clear if poured carefully.

### **Kegging.**

Some brewers prefer to store their beer in kegs for convenience or a draught style. Kegging has advantages in that the beer is faster to transfer from the bucket and you can pour off any volume to suit your needs. We recommend using beer finings to ensure that your beer clears effectively in the keg.



Kegs may be plastic or stainless steel. Plastic homebrew barrels are readily available and good ones have a gas relief valve and CO2 injector valve fitted in the cap. This is important so that the barrel pressure can be maintained at around 5psi. If the pressure is higher then you may get a problem with FOB (Foam on Beer). This means when you pour the beer you will get a small amount of beer and a glass full of froth! Most plastic barrels will hold 40 pints of beer, although it is possible to buy one that holds a smaller volume.

If the barrel is fitted with a gas valve you will be able to purchase a gas bulb holder and supplementary CO2 bulbs to inject gas into the barrel if the beer pours flat.



Larger refillable S30 gas canisters are available, but you may need to swap over your valve to accommodate these.

When using a plastic barrel, dissolve 110gm of brewing sugar into a little hot water and add to the pre-sanitised barrel. Then syphon the beer from the bucket into the barrel, leaving any sediment behind. To get a good seal it is important to apply Vaseline (or similar) around the cap thread. This will help to maintain a good seal. Then tighten down the cap and store the barrel in a warm place (22-24C) for 5 days. This will allow a secondary fermentation to take place which will build up the pressure. Then store the barrel in a cool place for 2 weeks to clear and condition before drinking. The first pint or two may be cloudy as some sediment may settle around the tap during the clearing process. This is perfectly fine to drink but the beer should become clearer as you pull more off. If the gas runs out at some stage, it is important not to open the cap. Although this would enable the beer to run out, it would introduce air and after a few days the beer would deteriorate (this is the same situation that pubs experience with cask beer).

Even though there is no pressure in the barrel the gas covering the beer is CO2, which keep it pure, if the barrel cap is unopened. Therefore, always apply supplementary CO2 gas to your barrel if it runs flat. By following this procedure, beer should be perfectly fine in a barrel for over 6 months.



There are several semi-commercial stainless-steel kegs available to home brewers. The most popular one is the Cornelius Keg, often fondly referred to as the Corny Keg. This is a 19litre keg which contains a gas in disconnect valve and a beer out disconnect valve. The beer out valve has a draw tube fitted to it which draws beer from the bottom of the keg. When it comes to gassing the beer, Corny Kegs are designed to be force carbonated rather than have a secondary fermentation. Beer should be as clear as possible before transferring it into a Corny keg in order to eliminate as much sediment as possible (since the draw tube is very close to the bottom of the keg, any sediment will be pulled up).



Home brewers often “Crash Chill” beer in the fermenting bucket before transferring to a Corny keg. This means storing the bucket at around 5 degrees Centigrade for 2-3 days with finings added. This will allow as much sediment as possible to fall, resulting in a ‘bright beer’ (Bright beer is beer in which yeast is no longer in suspension).

In the winter it is easy to achieve a low temperature in a cold garage or unheated room. In the summer you may need to invest in a fridge or kegerator). Once the beer is transferred to the Corny keg it should be connected to a pub gas cylinder (or an adapted S30 cylinder) and pressurised to 25psi for 5-7 days. When you first connect the gas, purge the gas relief valve on the Corny lid a couple of times to release any air and ensure a CO2 layer covers the surface of the beer.

This will prevent the possibility of airborne bacteria getting into the beer. After 7 days the beer should be fully carbonated. At that point turn the regulator pressure to 5psi for dispensing and release the excess pressure in the corny keg by purging the gas release valve. The beer will now be ready to drink. Pressure can be adjusted to find the correct balance between sufficient gas and minimum fob.

Corny kegs have become the first choice of home brewers because of their suitability for home bars. They can be easily stored in a kegerator and connected to a variety of Fawcett's (beer taps). This allows brewers to dispense cold beer at any time in a pub style environment. The Corny keg holds 19litres so the remaining 2 litres or so in a batch is normally bottled. This provides a comparison between keg and bottled variants of a beer.



The Corny keg system is initially a more expensive system than a plastic barrel, but it does offer the ability to expand your set up over time and develop a superb bar set up. You would initially need a gas regulator and pub style gas cylinder, gas in and beer

out disconnect valves, and some John Guest beer line. Taps can be directly fitted to the beer out disconnect valve. You may then wish to expand your system later and perhaps build your own pub style bar at home, either in a garage, a shed/summerhouse, or a spare room. This is where the fun really starts and thousands over home brewers have created superb home bars during the covid lock down period. Our staff would be happy to offer you advice and ideas to support your journey.

# USING A HYDROMETER



A hydrometer is an essential piece of equipment for brewing. It effectively measures the amount of sugar in a solution (in our case the solution is beer or cider). Hydrometers are calibrated so they provide a reading of 1.000 in water at 15 degrees Centigrade. Hydrometer readings are essential to measure the ABV of a beer or cider and to confirm when fermentation has completed. Each point on the scale is referred to as a specific gravity point. Hydrometer scales typically range from 0.980 – 1.150.

The Specific Gravity of a liquid is that liquid's density compared to water. A liquid with a Specific Gravity of 1.054 is 1.054 times the density of water, for example. In beer, there are several things which can contribute to the density of the wort before fermentation and of the final beer when it has finished fermenting.

Suspended in your beer will be sugars, unfermentable starches, hop materials and oils, minerals, and other things that will all contribute to the density of the liquid. You do not need to worry about this though

To take a reading, put a sample of the beer or cider into a trial jar and lower the hydrometer into it. Position it vertically and read the level of the beer/cider at eye level. You will note that the liquid seems to curve up a little at the edges where it meets the hydrometer. Try to read at the base line of the liquid (referred to as the meniscus).

*Tip: If bubbles collect around the hydrometer, try spinning it between your thumb and forefinger to push the bubbles away.*



If you are returning the drink to the batch or are putting the hydrometer directly into the bucket, make sure the equipment has been pre-sanitised. Try to avoid taking too many hydrometer readings as fermentation progresses as this increases the opportunity for airborne bacteria to be introduced into the batch.

Take an initial reading at the point when you are about to introduce the yeast and the wort has cooled down. This reading is called the original gravity (OG). Make a note of the reading for later use.

You should take another hydrometer reading when the fermentation process is complete or nearing its end. This is the point where CO<sub>2</sub> has stopped bubbling through the airlock (alcohol will have been generated by this stage, so the batch is now referred to as beer not wort). This reading is called the final gravity (FG) and should be close to the target gravity indicated on your kit label or instructions. Normally a final gravity between 1.008 and 1.014 should be achieved which will represent approx. 20-25% of the beer's original gravity. Take care when opening the bucket lid to take readings and undertake the process as quickly as possible to minimise air contact. Repeat the process after 24 hours and if the FG is still the same then it can be assumed that the fermentation is complete. If a very high reading is obtained (above 1016) then this may indicate that the fermentation has not yet finished, or it has stuck (see problems to avoid).

# DEVELOPING YOUR HOBBY



As you progress and develop brewing skills, there are endless opportunities for experimenting and developing your own personal recipes. You may wish to add fresh or dried fruits to an IPA or cider or add coffee beans or chocolate nibs into a stout. Our staff are always happy to discuss ideas with you to enhance or tailor beer styles to your precise needs. You might consider buying a kegerator to serve cold beers, or a bar style beer Fawcett, with 1,2, or even 3 beer taps.

One thing is for sure, you will be making delicious beers and ciders that are every bit as good, if not better than their commercial equivalents, at a fraction of commercial prices. What's not to like about that as energy and cost of living prices soar! Whichever way you choose to develop this exciting hobby, rest assured that our friendly, knowledgeable team are here to advise and support you on your journey.



# PROBLEMS TO AVOID

If you sanitise thoroughly, focus on maintaining the correct temperature for fermentation, and transfer your beer or cider promptly after fermentation has completed, then you will minimise the risk of beer spoilage and other issues. Below is a list of problems that may be encountered but these are extremely rare in our experience:

**Fermentation not progressing.** Sometimes CO<sub>2</sub> will escape around the side of your bucket rather than through the fitted airlock (make sure the airlock has water in it). Signs of fermentation are a foam on the surface of the beer and CO<sub>2</sub> being given off. Also falling hydrometer readings over 2 days should indicate sugar is being converted. If fermentation is not occurring it could be that the wort was too hot when the yeast was introduced, which has killed it. Alternatively check that the ambient temperature of the room and bucket is not outside the tolerance of the yeast. If necessary, add a fresh sachet of yeast.

**Fermentation has finished but the final gravity (FG) is higher than expected.** Each kit will have a target final gravity which you should get close to. If the gravity has remained stable over 3 days at the end of fermentation, then the beer has effectively finished its fermentation. The more malt extract that is provided in the kit, the higher the FG will be. Some strong ales may not ferment below 1014 so do not worry. If you think that there is still residual sugar in the beer, then consider reducing the carbonation drops to one per bottle or reducing priming sugar in kegs by 25%.

**Too much pressure in bottles or keg.** Occasionally you may find too much pressure in your final beer. This is usually more noticeable in bottles than kegs (which are fitted with gas relief valves). The problem is usually that there is too much sugar in the bottle so secondary fermentation has produced extra CO<sub>2</sub>. Make sure that fermentation has completed before bottling or kegging and do not over prime bottles. Alternatively, you may have bottled/kegged too early. Mature your bottles and kegs in a cool environment so refermentation does not occur. If you put your beer bottle in the fridge for 24 hours before drinking, that may reduce excess pressure to a minimum level. Occasionally the excess pressure (particularly if the beer keeps erupting from the bottle after opening) is due to contamination in the beer.

**No pressure in bottles or kegs.** The reason for this may be that the beer was left too long in the bucket after fermentation has completed. There is then no life left in the yeast and insufficient sugar for secondary fermentation to occur. Check that the seals on your bottles/kegs are sound and that you primed the bottles/kegs as necessary. Also check that the bottles or keg have been left in a warm place for 4-5 days for secondary fermentation to commence. It is possible to force carbonate kegs with supplementary CO<sub>2</sub> gas to deal with the problem.

**Beer tastes sour or vinegary.** Your wort may have become contaminated. This could be as a result of ineffective sanitisation or poor temperature control. Avoid lifting the lid frequently during/after the fermentation process as this could introduce a microbial airborne bacterium into the beer. Unfortunately, contaminated beer needs to be discarded and all equipment deep cleaned/sterilised with Stericleen or similar before use. This problem is a rare occurrence.

**Beer has a strong or off aroma.** This usually happens if the temperature is too high during fermentation. Alternatively, there was insufficient yeast to support the fermentation of a strong beer. The beer will still be drinkable but check temperatures for future brews. This problem is more likely to occur during excessively hot summer days. Try to ferment in a cooler place during these periods.

**Beer has a strange taste resembling a plaster, TCP, or a metallic taste.** This may be due to poor sanitisation or insufficient oxygen being present to support fermentation. Make sure you stir the wort vigorously for at least 2 minutes prior to adding the yeast. The biggest cause of this issue (sometimes referred to as the “homebrew taste” in past years) is the presence of chlorine or chloramine in the water used. This problem can be eliminated by using Pure Brew in all your brews.

**Beer has a strange Buttery taste.** This is due to the presence of diacetyl. Make sure you follow instructions and particularly temperatures when making beer kits. The beer will still be drinkable. This problem is normally confined to all-grain kits and more rarely with part-grain kits.

**There is a strange white skin or flecks of white on the top of the beer.** This will have been caused by airborne bacteria (probably caused by beer being left too long in the bucket after fermentation has ended or the bucket lid being removed frequently towards the end of fermentation) or through poor sanitisation. Unless you like sour beers, discard the brew and deep clean/sterilise all equipment with Stericleen before using again.

**Beer smells like nail polish.** CO<sub>2</sub> was not allowed sufficient space to escape during fermentation or fermentation took an excessively long time to complete (particularly stronger ABV beers).

**Beer smells or tastes like wet cardboard.** The beer was over-exposed to air during the later stage of the brewing process.

# GLOSSARY OF BREWING TERMS

It can sometimes seem like another Language when brewers are discussing their hobby. Therefore, it is worth knowing some of the terms and acronyms that are frequently used:

**ABV** - Alcohol by Volume. This is the final strength of the beer. Most kits will give a target ABV.

**Attenuation** - Attenuation refers to how well a strain of yeast converts sugars into alcohol. The attenuation rate of yeast is usually listed as a percentage and for most beer kits is around 75%. Different attenuation rates result in different strains of beer. Visible signs of attenuation beginning are the appearance of yeast foam on the surface of your brew and airlock activity as CO<sub>2</sub> is released.

**Brewing Sugar** - This is Dextrose Monohydrate. Dextrose Brewing Sugar, often referred to as "Corn Sugar" or "Glucose" is recommended in place of household white sugar "Sucrose" in either your fermentation or for priming your beer when kegging. Dextrose is faster to dissolve than white sugar and 100% fermentable. Brewing Sugar tends to ferment faster, more consistently, and is higher yielding compared to normal household Sucrose-based sugars.

**Carbonation drops** - Brew Fizz carbonation drops are used for bottling beer. Add 2 tablets per 500ml bottle to ensure a well-conditioned final drink. They are a more effective substitute to household sugar for priming beers, lagers, and ciders.

**EBC** - European Brewing Convention. This is a measure of colour in your beer. The higher the EBC, the darker the beer will be. It ranges from 1 (pale) to 40 (black stout). The EBC value of a beer would roughly equate to twice that of the SRM scale for measuring colour.

**Finings** - Finings can be added to beers or ciders to help clearing and to make the sediment formed in bottles or kegs stick to the bottom to a greater extent. Traditionally, finings are made from isinglass but there are excellent vegan friendly finings such as Starbrite which will enhance the clearing process.

**Flameout** - This term refers to a short rest period at the end of the boil process (when making part-grain or all-grain kits) before the wort is cooled. The temperature of the wort is allowed to cool to around 80C and a small measure of hops are added to the wort for 10-15 minutes to add subtle juicy flavours to the beer.

**Gravity** - A measure of density of wort or beer (effectively the amount of sugar in it). This is measured on a hydrometer.

**Hops** - Hops are used primarily as a bittering, flavouring, and stability agent in beer, to which, in addition to bitterness, they impart floral, fruity, or citrus flavours and aromas. Hops contain alpha acids and beta acids. Alpha and beta acids are the two main organic compounds that determine bitterness, flavour, and shelf life of your beer, while essential oils impart unmistakable hop aromas we know and love. Hops can be split into three main categories: bittering, aroma, and dual. Bittering hops tend to have a high amount of acid in them and impart that recognizable bitter flavour to the beer.



Aroma hops have less acid but a more pronounced flavour and aroma and are used to make the beer taste and smell a specific way. Aroma and dual-purpose hops are often added to the bucket towards the end of the fermentation process to add a delicious aroma and subtle flavours. This is known as dry hopping. a measure the colour of malt.

**Hop Spider** - This is a mesh filter tube and base which hangs inside boiling pans or buckets. It holds hop additions under the surface of the beer so the flavour will be extracted but the hops are contained for easy removal afterwards avoiding excessive sediment.



**Hydrometer** - A device which can be immersed in beer to measure the gravity. Water measures 1.000 on a hydrometer. Typically, a 4.5% ABV beer would have a gravity (OG) before fermentation of 1.045 and a final gravity (FG) of around 1.010 at the end of fermentation.

**IBU** - International Bittering Unit. This is the measure of bitterness provided by the hops. The higher the number the more bitter the beer will be. As an indication Guinness has an IBU of 45 and Budweiser 7. Typically, a blonde ale will be 22 and American IPAs are around 57.

**Lovibond** - The Degrees Lovibond scale is used to measure colour or darkness in grains. The higher the number, the darker the malt. The original Lovibond system was created by J.W. Lovibond in 1883, and used coloured slides that were compared to the beer colour to determine approximate value. EBC and SRM are typically used to measure wort colour while °Lovibond is most often used to measure the colour of malt.

**Malts** - Malt is barley or other grain that has been specially prepared for brewing. Brewing is the process of using water to extract sugar (along with other compounds) from these grains to produce flavour, colour, and alcohol in beer. Malts are often described as base malts or adjunct malts. Base malts are the malt or malts in a grist which should be mashed (usually at 66C) and provide the bulk of the fermentable sugars in a wort. After being malted, base malts are very lightly kilned both to dry the malt and to develop subtle flavours. Base malts are the primary malts used in most beers brewed by advanced all-grain brewers or commercial breweries.



The subtle differences between them can make a significant difference in the final beer. Malt Extract used in beer kits consists of base malts that have been mashed and processed. Part-grain kits may contain some base malts which is why the grains are steeped at 66C for around 30 minutes. Adjunct Malts are Unmalted wheat, barley, rye, oats, maize, and other grains which are used to colour and flavour beers. They can also be added to provide mouthfeel to the beer. Other adjuncts (non-malt sources of fermentable sugars) include Belgian Candi Sugar, Cacao Nibs, Honey, Coffee Beans, etc. When you are ready to experiment, you can try adding adjuncts to beer kits to give different flavours. We would recommend speaking to an experienced shop assistant to ascertain suitability and quantities of adjuncts to add to kits.

**Malt Extract** - Malt extract is made by taking the liquid collected during a mash and dehydrating it either into a thick syrup (called LME-Liquid Malt Extract) or dry-powdered form (called DME-Dried Malt Extract, or Spraymalt). Beer Kits will primarily contain hopped Malt Extract.

This is LME that includes a bittering hop. Good quality Part-Grain Kits usually contain commercial grade unhopped LME and hop additions are made separately. Malt extract can be added to kits to improve the body of the beer. Most kit brewers use beer enhancer instead of sugar, which is a blend of brewing sugar and DME. This adds body and flavour to the beer without increasing the ABV.

**OG** - Original Gravity. This is the hydrometer reading that is taken immediately prior to adding the yeast.

**Pitching** - This is the process of introducing the yeast to a brew. Most kits will recommend adding a dried yeast sachet to the wort and vigorously stirring to aerate/oxygenate it. It is important to read the instructions with your kit, or on the yeast sachet to identify the correct temperature for pitching and fermentation. There are a wide variety of yeasts available, and they will provide different flavours. Each yeast supplied with a kit will have been carefully profiled and will have a recommended fermentation temperature. Try to keep the temperature as close as possible to that recommended and avoid wide fluctuations if possible. For higher gravity beers it may be necessary to add two sachets of yeast or to make a yeast starter. Ask a shop assistant for advice on preparing a starter.

**Priming Sugar** - This is the small amount of sugar added to bottles or barrels to carbonate beer or cider. Remaining yeast cells eat all the sugar (if the temperature of the bottles or barrel is kept warm - 22-24C), and release carbon dioxide. The carbon dioxide cannot escape and is dissolved back into the beer or cider, which naturally carbonates it.



Brewing sugar or household sugar can be used for priming (dose rate is usually 100g for a barrel or ½ level teaspoon per 500ml bottle). Most brewers now use carbonation drops such as Brew Fizz when bottling.

**Sanitisation & Sterilisation** - Sanitisation is the most important element of home brewing. The process is undertaken immediately before using equipment. The golden rule is that anything your beer touches should be sanitised. Sanitisation reduces any potential sources of microbial spoilage to irrelevant levels, which will minimise the risk of anything spoiling your brew. Today, no-rinse sanitisers such as Suresan are mostly used as they are highly effective, will not damage stainless steel equipment, and are kind to clothes and skin. Suresan can also be used to sanitise household items such as gym water bottles etc. To compliment good sanitisation practice, it is important to clean all equipment thoroughly after use, and before it is stored. Cleaning refers to removing yeast/sediment marks, dirt and other visible stains. This is the same level as washing crockery and cutlery. Everything you use during a brew should be spotlessly clean and free of stains or marks and stored dry. When cleaning plastic items avoid using hard scouring pads, or anything that might scratch the surface, as those small scratches are an ideal place for microbes to hide. If buckets or other equipment become scratched or split (including syphon tubes) it is best to replace them. A thorough washing is a precursor to sanitising, as sanitising agents alone will not be able to remove built up grime and deposits on equipment that harbour bacteria.

Sterilisation is a third process of killing all living organisms on a surface, such as surgical instruments in a dental surgery or hospital. This is not a level that is necessary or routinely undertaken in brewing. sanitising your equipment is the best way to ensure that even at the microbial level there shouldn't

be enough to cause any infection. However, if you have been unlucky and have experienced an infection, we would recommend filling your bucket with water and adding a dose of Stericleen, which is 99.9% effective in killing bacteria and microbial cells. Immerse all equipment into the solution and soak for a minimum of 4 hours. Be careful to avoid the solution touching clothes as it will take the colour and may irritate skin. Thoroughly rinse equipment with cold water afterwards to remove traces of the steriliser. Stericleen can also be used for deep cleaning equipment and glassware. If necessary, it can be mixed with an oxi-based household cleaner for removing stubborn marks and stains.

**Sediment** - Hop debris (known as Trub) and dead yeast will fall onto the bottom of the bucket during fermentation. This is known as sediment. Your syphon tube will be fitted with a rigid sediment trap to avoid transferring sediment into bottles and kegs. A small amount of sediment will form in bottles as a result of secondary fermentation. This is perfectly normal and careful pouring will avoid transferring this to the glass.

**SG** - Starting Gravity. This is another term for Original Gravity.

**SRM** - Standard Reference Method is the method for colour assessment of wort or beer as published in the recommended methods of the American Society of Brewing Chemists. SRM and Lovibond are effectively the same scale. SRM tends to be used in America whilst the EBC scale is more commonly followed in UK.

**Wort** - This is effectively the liquid you make through the initial brewing process, before fermentation takes place. Wort contains sugars (the most important being Maltose). Wort will be fermented by brewing yeast in your bucket to produce alcohol. CO<sub>2</sub> will be given off during fermentation, which normally passes through an airlock.

# WHAT'S IN THE BOX?

## Basic Beer & Cider Starter Kit:



This is a value focused starter kit that contains all the basic equipment needed to produce a 5-gallon batch of beer or cider. This starter does not contain a beer or cider kit.

Kit contains:

- 1 x 27.5 Litre bucket
- 1 x LCD thermometer
- 1 x Airlock
- 1 x 250g Suresan No rinse steriliser
- 1 x Syphon Tube
- 1 x Flow Control Clip
- 1 x 14" Rigid Tube with sediment cup
- 1 x Bucket Clip
- 1 x Plastic Spoon
- 1 x Hydrometer

### Detailed List:

**Suresan** - A no-rinse sanitiser to ensure that all equipment being used is clean and sterile. You do not need to rinse this sanitiser out with water.

**27.5 litre bucket** - large enough for a full 5 gallons with plenty of head space in case the contents froth during the ferment. The bucket lid is drilled and an airlock gasket fitted.

**LCD Thermometer** - A stick on thermometer is included to show you the current temperature of the contents inside the bucket. This is important to ensure that a constant correct fermentation temperature is achieved.

**Plastic spoon** - This large spoon allows the mixing of the contents easily and quickly and is used to aerate the beer once yeast is added.

**Airlock** - A bubbler airlock to allow the fermenting gasses to be released but stop air getting in the bucket. The airlock is simply filled halfway with water and fitted into the gasket in the bucket lid

**Syphon tube** - A food grade plastic tube that allows you to transfer the liquid from the bucket to another container. The syphon kit includes a rigid tube with sediment cup. This allows the tube to rest on the bottom of the bucket and helps reduce sediment from being carried over when transferring your beer.

**Bucket clip** - keeps the syphon tube held in position against the inside wall of the bucket, freeing up a hand.

**Flow control clip** - Allows you to start and stop the flow of liquid. This is useful when filling bottles.

**Hydrometer** - Allows you to take specific gravity readings to determine when fermentation is complete and assess the ABV. This equipment is designed to last a very long time. You will need to replace the sanitiser when the contents have been used, but the equipment should last years if looked after carefully.

## Master Your Craft Deluxe Beer and Cider Starter Kit:

This starter kit contains everything included in the basic starter plus:

- 1 Heating Pad which fits under your bucket or bottles/keg and raises the temperature by 7C. This is useful outside of summer months and allows you to brew all year long.
- 1 handy Dark Rock Bar Blade
- 1 Session Series 40 Pint Recipe Kit
- 1 Beer Kit Enhancer



The Session Range from Dark Rock Brewing is an ideal first brew which takes kit brewing to a new level. High quality hopped malt extracts are matched with carefully selected blends of the freshest dry hops, to produce delicious beers with enticing aromas. These kits are simple to make and fast to clear and mature. From fermenter to glass within a month, and results which are of commercial quality. You can choose from a wide of beer styles from around the world, including a powerful West Coast APA, which packs a hoppy punch from the latest crop of Citra and Simcoe hops. From down under, there are three carefully selected styles; a New Zealand Pilsner, New Zealand Riwaka Pale Ale, and an Aussie Gold Ale.



They are true to the Southern Hemisphere styles. An English Amber Ale and Canadian Craft Ale provide a more traditional amber style, with hops that are true to the malts, to provide a balanced moreish taste. Finally, a newer style, which is set to be a trendsetter is the India Pale Lager. The IPL uses Motueka and Simcoe hops to produce a hybrid style which is a cross between a lager and IPA. The result is a refreshing lager with a delicate hoppy taste and aroma. Perfect for summer barbeques and to compliment curry evenings. These kits are dead easy to make and produce beer as good as you can buy in a pub for around 40p per pint. With value like that, what's not to like.

## Master Your Craft Nanobrewery Starter Kit:

This is the ultimate craft brewing starter kit which contains all the equipment needed to brew any beer kit including part-grain kits. The starter includes a Dark Rock 40-pint Part Grain beer recipe kit. This is the starter that we recommend as it allows you to hit the road running with any beer kit. The Nanobrewery starter contains everything in the basic starter kit plus:

- 15 litre boiling pan
- Hop Spider
- Digital thermometer
- Heating Pad



Part grain beer kits are an excellent way to take your brewing to a commercial level. Brewing takes only an hour, and the results are exceptional. Part grain kits are suitable for all brewers, including beginners.

Dark Rock provides the ultimate range of part grain kits. Our expert knowledge of brewing combined with sourcing only the finest quality ingredients mean Dark Rock part grain kits will enable you to brew exceptional beer that will rival any you can buy in pubs and shops.

Dark Rock kits combine a whopping 3kg of the finest quality unhopped malt extract with a blend of premium malt grains and hops sourced from around the world. These kits are the best on the market and feedback from many satisfied customers' backs this up. All ingredients are bought and stored fresh and weighed into individual bags. Hops are vacuum packed in nitrogen-flushed foil bags to produce the maximum flavour and aromas. With a wide range of beer styles to choose from, there is sure to be a beer to delight you, whether it is a tropical pale ale, a rich stout, or a refreshing pilsner.







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