



WILLIAMSWARN

TRADITIONAL HOMEBREWING INSTRUCTIONS

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INTRODUCTION TO WILLIAMSWARN

In 2011, Master Brewer Ian Williams and Engineer Anders Warn launched the WilliamsWarn Personal Brewery in New Zealand, along with award winning malt extract kits. Homebrewing took a leap forward, allowing the home brewer to make cold, clear, cleanly fermented, perfectly carbonated beer at home in 7 days, just like a modern brewery.

This had never been achieved at home anywhere – professional quality beer in the same time-frame as that of a modern brewery.

The brew kits however can also be brewed using traditional homebrew equipment as described in this document.

Each of the 15 WilliamsWarn kits matches a style within the BJCP Style Guidelines. These guidelines were developed by the American Homebrewers Association (AHA) and detailed information about them can be found here www.bjcp.org. Advanced Recipes are available on the WilliamsWarn website www.williamswarn.com/Additional-Downloads to produce a further 52 BJCP styles from these kits by steeping extra grains and hops and other ingredients.

All of the beer kits consist of liquid and dry malt extract made in state-of-the-art brewhouses. Included with these are the best premium yeast strain for each beer style, from either Fermentis or Lallemend. A hard cider kit made from 100% New Zealand apples is also available.

The high quality of our ingredients became evident in June 2012, when a home brewer, Santiago Aon, won Gold for his Pilsner at the Asia Beer Awards using a WilliamsWarn extract kit. This was the first time a home brewer had ever beaten the big global breweries in an international beer tasting competition. The second person to achieve this feat, Nick Koppers, also accomplished it using a WilliamsWarn extract kit when he won Silver for his American Pale Ale at the same awards in 2013.

We're very proud that the only two home brewers to achieve such success against the big global players in the brewing industry both did so using WilliamsWarn ingredient kits.

The following information describes our brewing kits and how to brew with them to make great beer, even if you don't own a WilliamsWarn Personal Brewery.



Ian Williams

Anders Warn



DESCRIPTIONS OF OUR BEER AND CIDER KITS

Each kit has all the ingredients required for a traditional US homebrewer to make 5 US gallons of professional quality beverage or an owner of a WilliamsWarn Personal Brewery or a European homebrewer to make a 6 US gallon brew (5 UK gallons or 23 litres). When using a kit to make a 5 gallon batch, the final beverage specifications will be at a slightly higher level compared to when producing a 6 gallon batch, but at both volumes brewed, the final beverages will be within acceptable specification range for the beverage style being brewed. You can see the final beverage specifications for each kit brewed to 5 or 6 gallons in Table 1 below.

TABLE 1

| | 5 US gallons (19 litres) | | | | | 6 US gallons (23 litres/5 UK Gallons) | | | | |
|--------------------|--------------------------|-------|---------|------------|----------------|---------------------------------------|-------|---------|------------|----------------|
| | OG | SG | Alcohol | Bitterness | Colour SRM/EBC | OG | SG | Alcohol | Bitterness | Colour SRM/EBC |
| AMERICAN AMBER ALE | 1.055 | 1.014 | 5.41% | 39 | 15.5/31 | 1.045 | 1.011 | 4.47% | 32 | 13/26 |
| AMERICAN LAGER | 1.055 | 1.011 | 5.77% | 16 | 3.5/7 | 1.045 | 1.009 | 4.77% | 13 | 3/6 |
| AMERICAN PALE ALE | 1.055 | 1.014 | 5.41% | 36 | 8/16 | 1.045 | 1.011 | 4.47% | 30 | 7.5/13 |
| HARD APPLE CIDER | 1.050 | 1.008 | 5.55% | — | — | 1.042 | 1.007 | 4.55% | — | — |
| BELGIAN PALE ALE | 1.055 | 1.014 | 5.41% | 36 | 8/16 | 1.045 | 1.011 | 4.47% | 30 | 6.5/13 |
| BLONDE ALE | 1.055 | 1.014 | 5.41% | 22 | 4/8 | 1.045 | 1.011 | 4.47% | 18 | 3.5/7 |
| BOHEMIAN PILSNER | 1.055 | 1.011 | 5.77% | 45 | 8/16 | 1.045 | 1.009 | 4.77% | 37 | 6.5/13 |
| DRY STOUT | 1.055 | 1.014 | 5.41% | 39 | 60/121 | 1.045 | 1.011 | 4.47% | 32 | 50/100 |
| DUTCH PILSNER | 1.055 | 1.011 | 5.77% | 27 | 3.5/7 | 1.045 | 1.009 | 4.77% | 22 | 3/6 |
| ENGLISH BROWN ALE | 1.055 | 1.014 | 5.41% | 22 | 30/60 | 1.045 | 1.011 | 4.47% | 18 | 25/50 |
| ENGLISH PALE ALE | 1.055 | 1.014 | 5.41% | 24 | 8.5/17 | 1.045 | 1.011 | 4.47% | 20 | 7/14 |
| IRISH RED ALE | 1.055 | 1.014 | 5.41% | 28 | 15.5/31 | 1.045 | 1.011 | 4.47% | 23 | 13/26 |
| PREMIUM LAGER | 1.055 | 1.011 | 5.77% | 22 | 4/8 | 1.045 | 1.009 | 4.77% | 18 | 3.5/7 |
| SUMMER ALE | 1.055 | 1.014 | 5.41% | 16 | 3.5/7 | 1.045 | 1.011 | 4.47% | 13 | 3/6 |
| WHEAT BEER | 1.055 | 1.014 | 5.41% | 18 | 3.5/7 | 1.045 | 1.011 | 4.47% | 15 | 3/6 |

AMERICAN AMBER ALE

A bitter beer with full-bodied, speciality malt character.

Our American Amber Ale has a deep-amber, light-copper appearance from crystal and black malts included in the recipe. These give this beer caramel, raisin and biscuity notes with a slightly dry finish. The hops provide a prominent level of bitterness to balance the malt flavours.

The yeast under the lid is an 11.5g pack of Fermentis US-05 ale yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

To elevate the fresh hop aroma of this style, we recommend the brewer make a hop tea of 1-2 oz. (28-56g) of any American

hops in a French coffee press. Add approx. 30 fl. oz. (900ml) of hot boiled water to the hops, stir and then steep for 20 minutes. Plunge the solids and add the green, filtered hop tea to the mix of ingredients in your fermenter (before adding the yeast). Download the WilliamsWarn Advanced Recipes from our website for more details.

AMERICAN LAGER

A refreshing American Lager for those who appreciate one of the world's most popular beer styles.

Our American Lager is straw-coloured in appearance with a low bitterness. It is crisp, dry and thirst-stopping. The lager yeast employed will give some slightly fruity notes to add a pinch of character. The goal is a light-tasting beer with low levels of malt, hop and yeast character in perfect balance.



The yeast under the lid is an 11g pack of Fermentis S-23 lager yeast.

Ideally ferment at 59°F/15°C for 3 days and then increase to 64°F/18°C for a diacetyl rest to complete fermentation after another 3 days, after which time the S.G. should be close to the value stated in Table 1.

AMERICAN PALE ALE **A flavourful American Pale Ale.**

Our American Pale Ale has an amber appearance with a prominent bitterness. Due to ale and crystal malts used, it has a steady malt flavour with a touch of bready and toasty notes.

The yeast under the lid is an 11g pack of Fermentis US-05 ale yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

To elevate the fresh hop aroma of this style, we recommend the brewer make a hop tea of 1-2 oz. (28-56 grams) of any American hops in a French coffee press. Add approx. 30 fl. oz. (900ml) of hot boiled water to the hops, stir and then steep for 20 minutes. Plunge the solids and add the green, filtered hop tea to the mix of ingredients in your fermenter (before adding the yeast). Download the WilliamsWarn Advanced Recipes from our website for more details.

APPLE CIDER **A pleasant and appealing hard Cider.**

Our Hard Apple Cider is made from the highest quality apples. The result is a clean and crisp cider. The apple flavours are light and pleasant and the overall taste is refreshing.

The yeast used is an 11g pack of Fermentis S-04 yeast and we have included a 10g yeast nutrient sachet to assist the yeast in fermenting the juice.

This cider must should be made up to 5 or 6 US gallons (19 or 23 litres) by adding water. Stir in the nutrient first and then pitch the yeast after rehydration in water.

Ideally, ferment at 73°F/23°C for 6 days, after which time the S.G. should be close to the value stated in Table 1.

DO NOT CLARIFY. The yeast will settle at the end of fermentation and the cider will be clear.

BELGIAN PALE ALE **A flavoursome Belgian Pale Ale.**

Our Belgian Pale Ale has an amber colour and a decent bitterness. From ale and crystal malts used in the grain bill, it has a solid malty and slightly bready taste. The yeast employed is a true Belgian Ale yeast that will give banana, spicy and peppery attributes to the beer.

The yeast under the lid is an 11g pack of Fermentis T-58 ale yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

BLONDE ALE **A refreshing, easy-drinking Blonde Ale with a crisp palate.**

Our Blonde Ale is yellow in appearance with a moderate bitterness.

It sits in the Hybrid category of the BJCP Style Guidelines and is an ale version of a lager beer. It therefore ferments warm (73°F/23°C) with great efficiency with our ale yeast, but with the resulting taste profile being similar to that of a light lager.

The yeast under the lid is an 11g pack of Nottingham ale yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

BOHEMIAN PILSNER **A traditional Bohemian Pilsner with a rich, complex maltiness and a crisp finish.**

Our Bohemian Pilsner is deep gold in appearance with a high bitterness and long lasting creamy head. The yeast employed is a classic German Pilsner yeast that leaves a very clean taste.

The yeast under the lid is an 11g pack of Fermentis W34/70 lager yeast.

Ideally ferment at 59°F/15°C for 3 days and then increase to 64°F/18°C for a diacetyl rest to complete fermentation after another 3 days, after which time the S.G. should be close to the value stated in Table 1.

As an option, hop aroma and taste can be elevated if the brewer makes a hop tea of 1-2 oz. (28-56 grams) of any Czech (or German) hops in a French coffee press. Add approx. 30 fl. oz. (900ml) of hot boiled water to the hops, stir and then steep for 20 minutes. Plunge the solids and add the green, filtered hop tea to the mix of ingredients in your fermenter (before adding the yeast). Download the WilliamsWarn Advanced Recipes from our website for more details.

DRY STOUT **A true Dry Stout with a compelling personality.**

Our Dry Stout has a black appearance from the crystal malts, roasted malts and roasted barley employed in the grain mix. The result is a great Dry Stout that has liquorice, roasted coffee and chocolate flavours dominating. The prominent hop bitterness level helps elevate the dryness, which comes from the roasted un-malted barley used.

The yeast under the lid is an 11g pack of Fermentis S-04 yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

DUTCH PILSNER **This is a noble brew with a crisp finish.**

Our Dutch Pilsner is straw-coloured in appearance with a moderate, lingering bitterness. The yeast employed is a classic strain that leaves a slightly estery aroma that is typical of Pilsners from The Netherlands. When used with our light DME to make an all-malt beer, the combination of ingredients makes a Pilsner very true to the region.

The yeast under the lid is an 11g pack of Fermentis S-23 lager yeast which is commonly used by large breweries in Western Europe.

Ideally ferment at 59°F/15°C for 3 days and then increase to 64°F/18°C for a diacetyl rest to complete fermentation after another 3 days, after which time the S.G. should be close to the value stated in Table 1.



ENGLISH BROWN ALE

An authentic Brown Ale with a dark-fruit character.

Our English Brown Ale has a dark brown appearance from a range of speciality malts employed in the recipe. The resulting beer has an array of flavours that includes raisins, plums, figs, nuts, biscuits, caramel and toffee, that last into the finish. The hops provide a moderate level of bitterness that helps balance the dark-fruit malt flavours.

The yeast under the lid is an 11g pack of Fermentis S-04 yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

ENGLISH PALE ALE

A full-bodied English Pale Ale.

Our English Pale Ale has an amber appearance with a moderate bitterness. Technically, within the BJCP Style Guidelines it is a Standard Bitter – the lightest of the English bitter types with respect to alcohol content, colour and bitterness. This beer has a firm malty start, a touch of fruitiness from the yeast and a long dry finish from the hops.

The yeast under the lid is an 11g pack of Lallemend Nottingham ale yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

IRISH RED ALE

An easy drinking pint.

Our Irish Red Ale has a deep-amber, light-copper appearance from crystal and black malts included in the recipe. The malt focus gives this beer caramel, toffee and toasty notes and a slight dry, roasted-grain finish. The hops provide a moderate level of bitterness. Overall, this is an interesting beer that is a pleasure to produce and appreciate.

The yeast under the lid is an 11g pack of Nottingham ale yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

PREMIUM LAGER

A pleasant Premium Lager with a clean taste profile.

Our Premium Lager is yellow in appearance with a moderate bitterness. It is a satisfying beer that sits in between American Lagers and European Pilsners in character. The yeast employed will ferment clean and true-to-style. An agreeable drop that's ideal for brewing for social events and therefore to be shown-off to your friends.

The yeast under the lid is an 11g pack of Fermentis W34/70 lager yeast, the most famous and most widespread German lager yeast.

Ideally ferment at 59°F/15°C for 3 days and then increase to 64°F/18°C for a diacetyl rest to complete fermentation after another 3 days, after which time the S.G. should be close to the value stated in Table 1.

SUMMER ALE

A thirst-quenching Summer Ale, perfect for the hot summer months.

Our Summer Ale is straw-coloured in appearance with a low bitterness. Technically it is regarded as a Cream Ale – an ale version of a lager beer. It therefore ferments warm (73°F/23°C) with great efficiency with our ale yeast, but with the resulting taste profile being similar to that of a light lager.

The yeast under the lid is an 11g pack of S-04 ale yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.

WHEAT BEER

A refreshing, smooth-drinking Wheat Beer.

Our Wheat Beer has a straw-coloured appearance with a low bitterness. The malted wheat in the grain bill gives this beer a slightly grainy flavour with a creamy fullness that leads to a light finish. The yeast employed will provide decent levels of phenolic flavours and so this brew leans towards a fresh, German wheat beer in style.

The yeast under the lid is an 11g pack of Fermentis WB-06 wheat beer yeast.

Ideally, ferment at 73°F/23°C for 4 days, after which time the S.G. should be close to the value stated in Table 1.



BREWING INSTRUCTIONS

WHAT YOU NEED

You will need to buy a fermenter from your local homebrew store or online. This can be for example a plastic fermenter or a carboy as shown in Figure 1.

You will also need to buy any popular brewing detergent and a no-rinse sanitizing agent.

STEP 1: CLEAN AND SANITIZE

Clean your fermenter with any popular homebrewing detergent. Most detergents are alkaline which helps to dissolve organic residue such as yeast and beer. They may also contain chemicals to help clean off mineral scale. Follow the instructions for your detergent to make a cleaning solution.

1. For open bucket fermenters, use a non-scratch sponge to give the surface a good clean. For carboys, soak the carboy overnight or use a carboy brush to help clean the surfaces.
2. Dump the detergent and rinse all your fermenter thoroughly with water. Detergent is quite hard to rinse off, so rinse your fermenter well.
3. Then sanitize the surfaces with a no-rinse sanitizer. Follow the instructions and ensure all surfaces are wetted by the solution.
4. Drain your fermenter but do not rinse it with water. No-rinse products such as Sodium Percarbonate break-down into CO₂ and Water which are natural components of beer, so there is no need to flush the residue off.

STEP 2: ADD THE INGREDIENTS

1. Start to boil 3.2 US Pints (1.5 Litres) of water in a kitchen kettle.
2. While the kettle is boiling, add 8.5 US fl. oz. (250ml) of water at 77±9°F (25±5°C) to a clean cup. Ideally use a thermometer to get the water temperature correct and use cold and warm water as required.
3. Open the yeast sachet with scissors and add the yeast to this water (see Figure 2). Stir the yeast into the water for 10 seconds to help mix the yeast and then let it sit while the next steps are taken.

For the WilliamsWarn Hard Apple Cider pouch, add the contents directly to the fermenter then rinse the package with cold water and add that to your fermenter. Top up to 5 or 6 US gallons (19 or 23 Liters, depending on your system) with water close to 77±9°F (25±5°C). Then add the rehydrated yeast solution.

For WilliamsWarn beer kits, use the following method.

4. Soak the Liquid Malt Extract can in hot water for 10 minutes to make it easier to pour.





5. Add 25 US fl. oz. (750ml) of the boiled water to a jug. Open the liquid extract with the can opener and add most of the extract to the water in the jug whilst stirring the water with a spatula (see Figure 3).
6. Put the can with the residual extract on the table while you continue to dissolve all the extract well in the jug by stirring. Then add this dissolved extract in the jug to your fermenter (see Figure 4).
7. Fill the empty extract can with the remaining boiled water (25 US fl. oz./750ml) and top the can up with cold water. Stir with the spatula to dissolve all remaining extract (see Figure 5) and then add this to the jug (use a cloth to hold the can if it is too hot to handle).
8. Stir the contents of the jug to help dissolve any remaining extract and then add this to your fermenter also. Then using the jug, add 6 US pints (3 Litres) of cold tap water to your fermenter to provide more volume to dissolve any dry extracts into.
9. Open the dry malt extract bag with scissors and add it to the liquid in your fermenter in one dump and then stir with the spatula (see Figure 6). Some lumps may form that are difficult to dissolve but they will dissolve by themselves as you fill the fermenter with water and over the next hour or so.

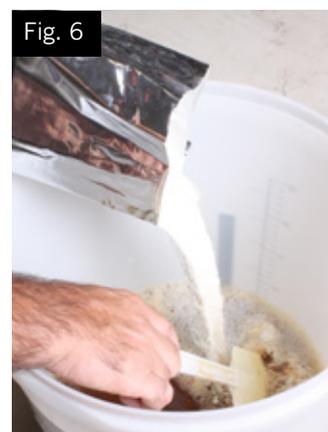
If you intend to measure the Specific Gravity (S.G.) of your wort/must to be able to calculate the alcohol content of your final beverage, then you need to dissolve all the dry extract to get an accurate reading. This is better done by adding the dry extract in smaller amounts and stirring before adding the next amount. However beginner brewers can just read the data on Table 1 to calculate SG's and alcohol. If you do want to measure SG, you will need to buy a hydrometer from your local homebrew store.

10. If you are adding more ingredients such as steeped malt or hops, you can add them now. The example in Figure 7 shows a hop tea being added. In this instance 2 oz (56g) of hop pellets were steeped in warm water (158°F/70°C) in a French Coffee Press and then strained as a liquid into the fermenter. For more information on tweaking techniques like this, download our Advanced Recipes pdf on our Additional Downloads page on our website.
11. Top up to 5 or 6 US gallons (19 or 23 liters, depending on your system) with water close to 77±9°F (25±5°C). Once full, stir all the total contents in the fermenter gently for about 10 seconds with a spatula, to get a homogenous liquid wort/must. It's good to try and get a vertical stir so that any denser liquid at the bottom comes to the top and mixes.
12. For cider, add the yeast nutrient when you have filled your fermenter and stir it in.
13. Then for both beer and cider add the rehydrating yeast solution now.

See Table 1 for final beverage specifications when brewing to 5 or 6 US gallons.

STEP 3: FERMENTATION

Ideally, fermentation is performed best with some temperature control. If you have such control, then set the fermenter to 73°F/23°C for ales and for lagers/pilsners set at 59°F/15°C for the first 3 days and then 64°F/18°C for the next 3 days.





If you do not have temperature control, try to ferment both the ales and lagers somewhere in a room at a temperature near the low 70's°F/20's°C. This will ensure the yeast ferment strongly. Lagers are traditionally made at lower temperatures but this was historically mainly to help prevent spoilage by other microorganisms and the yeast actually prefer warmer temperatures and will ferment faster if warmer. You will still be making a lager at these temperatures because you are using lager yeast. Try to avoid fermenting higher than 79°F/26°C as the yeast may produce higher alcohols which can give headaches.

In general, WilliamsWarn ales should be finished after 4 days fermentation and our lagers and cider after 6 days. This can be checked by measuring the Specific Gravity (SG)—which should be close to the value stated in Table 1—and/or checking there is no major activity in the brew, meaning there are no longer bubbles of CO₂ rising constantly. During fermentation there is usually quite a lot of foam visible on the surface of the beverage. When fermentation is over this foam will collapse and that is another indication that fermentation is over. If you have an air-lock, there will no longer be any bubbles bubbling through it.

FOR BOTTLED HOMEBREW

STEP 4: BOTTLING

When brewing to a 5 US gallon brew size, you will need 40 pint bottles (473ml) or 53 12oz bottles (355ml). When brewing to a 6 US gallon brew size (5 UK gallons/23litres) you will need 48 pint bottles (473ml) or 65 12oz bottles (355ml).

1. Clean and sanitize your bottles. This is most easily done in an automatic dishwasher on a full cycle with no detergent used, just water.
2. Add ½ a teaspoon of table sugar or preferably dextrose (glucose) to each bottle.
3. Fill each bottle from your fermenter leaving at least 25mm/1 inch of headspace (Figure 8).
4. Cap the bottles (Figure 9) and then invert several times.
5. Store upright above 64°F/18°C for 2 weeks minimum but ideally 4 weeks. During this time the yeast that remains in the beer will ferment the sugar and carbonate the beverage in the bottle.
6. Refrigerate and then enjoy. For bottled homebrew there will be a yeast sediment layer at the bottom of the bottle, so pour carefully and leave the yeast in the bottle.

FOR KEGGED BEER HOMEBREW (NOT CIDER)

STEP 4: CLARIFICATION

Beer for bottling needs yeast for the second fermentation in the bottles so should not be clarified, but beer that is kegged can be crystal clear. To achieve clarification of beer that will be kegged:

1. Ideally transfer the brew to a secondary fermenter so that the brew is off the yeast sediment.
2. Ideally cool the fermenter in a fridge. This step is not absolutely essential but preferable.
3. Add 1 fl. oz. (30ml) of WilliamsWarn clarification agent to the fermenter and stir gently to avoid aerating the brew too much which will oxidise the beverage. If you can put a layer

Fig. 8

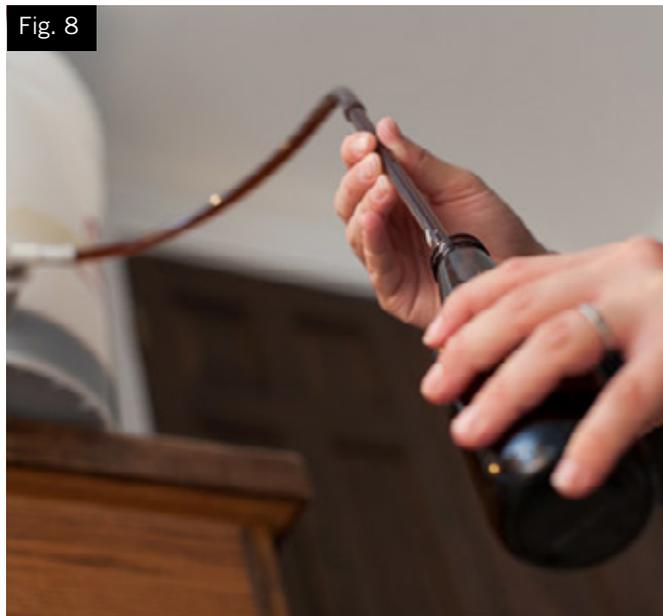


Fig. 9



of CO₂ over the beverage surface while you do this and after, it would help avoid oxidation.

4. Leave the fermenter for 24 hours. The clarification agent reacts with both protein haze and yeast and will sediment so that after one day there will be a new sediment layer at the bottom of the fermenter.
5. Then add another 1 fl. oz. (30ml) of WilliamsWarn clarification agent and stir gently into the top half of the beer without disturbing the sediment at the bottom and leave for another 24 hours.
6. There should be a definite sediment layer at the bottom of the fermenter.



STEP 5: KEGGING

1. Clean and sanitize your Cornelius keg.
2. Using the CO₂ bottle you will use for carbonating and dispensing your brew, add some CO₂ through the OUT port on the Cornelius keg. This is so that there is a layer of CO₂ in the keg before you transfer the beverage from your fermenter. CO₂ is heavier than air so it will sit at the bottom of the keg.
3. Then transfer the beverage from the fermenter to the keg, filling from the bottom. Avoid transferring any of the sediment layer at the bottom of the fermenter.
4. When full, close the keg and place it in a refrigerator. Then apply pressure via your CO₂ cylinder using a low pressure gas line with a grey ball-lock fitting attached to the IN port on the keg.

FOR KEGGED CIDER HOMEBREW

For kegging WilliamsWarn cider, the yeast should have settled extremely well so there is no need for a clarification step. When fermentation is complete and the yeast has settled, transfer to your keg.

PRESSURE RECOMMENDATIONS FOR CARBONATING KEGS

Apply the pressure than corresponds to the carbonation level you desire. A general rule of thumb is 1 bar (14.5 psi) for 5 days at 39°F/4°C to achieve 5.5 gl/L (2.75 volumes) CO₂.

To achieve a quicker carbonation, set the pressure at 2.5 bar (36 psi) for 2 days and then your final pressure level (e.g. 1 bar/14.5 psi) for 1 day.

DISPENSING A KEG

There are 3 basic options to dispense a keg.

5. **A fridge set up with draft tap inside (Figure 10):** Inside a fridge you have a CO₂ cylinder connected to the keg via the low pressure line with a grey ball-lock connected to the IN port. You need a 6ft (2m) line of hose (to slow the beverage flow down) connected to the OUT port of the keg by a black ball-lock fitting and with a plastic draft beverage tap at the other end of the hose to dispense through.

The entire set up is kept cold in the fridge and you need to open the door to pour a beer.

6. **A fridge set up with draft tap outside (Figure 11):** This is the same set up as above except the tap is a stainless steel tap that can be mounted through the fridge door.

The tap is therefore on the outside and you can pour a beer without opening the fridge door (which keeps the keg colder).

7. **A specialised kegerator (Figure 12):** A dedicated CO₂ cylinder will be attached outside the fridge and kegs inside, with fittings to attach to the kegs so that beer is poured through taps on a front on top of the fridge.

As in (2) above, the fridge door doesn't need to be opened to pour a beer so the keg stays colder.



Fig. 10



Fig. 11



Fig. 12



BREWING ACCESSORIES

THE COUNTER-PRESSURE BOTTLER

Another WilliamsWarn invention, this counter-pressure bottler allows you to connect to your WilliamsWarn Personal Brewery or a pressurised Cornelius keg and fill bottles without losing any carbonation.

Once the two hoses (gas and beverage) are connected via the simple push-lock fittings on top of the filling valve, you open the gas valve for a few seconds to pressurise the bottle and purge some air out a variable pressure relief valve. You then close the gas valve and open the beverage valve to allow beverage to enter. The beverage fills against a back-pressure and so doesn't foam and doesn't lose any carbonation. Pressure release and therefore flow rate are controlled by how open the variable pressure relief valve is set.

A 1 US pint (500ml) bottle can be filled in 40 seconds and the bottles are ready to consume immediately, as the beer is already carbonated.



34 FL. OZ. (1 LITRE) CLARIFICATION AGENT

The WilliamsWarn Clarification Agent works very well to sediment most yeast strains as well as to remove protein haze in beer.

In WilliamsWarn Personal Breweries we perform a 2-step clarification over 2 days, once the beer is cold. For homebrewers using more traditional fermenters, when fermentation is complete, ideally transfer to a secondary vessel and then add 1 fl. oz. (30ml) of WilliamsWarn clarification agent to the vessel and stir well but avoid aerating the brew which will oxidise the beverage. If you can put a layer of CO₂ over the beverage surface while you do this and after, it would help avoid oxidation.

Leave the fermenter for 24 hours. The clarification agent reacts with both protein haze and yeast and will sediment so that after 24 hours there will be a new sediment layer at the bottom of the fermenter.

Then add another 1 fl. oz. (30ml) of WilliamsWarn clarification agent and stir into the top half of the beer without disturbing the sediment at the bottom and leave for another 24 hours.

After this there should be a definite sediment layer at the bottom of the fermenter. The result is a crystal clear beverage in 2 days total clarification time.

For beers, the colder the beer the more protein haze will come out of solution and react with the agent. It is an inert product suitable for vegans and a product commonly used in breweries. You may find you can clear your beers in one step and with less volume of agent.

The agent does not work on beverages that are produced without malted barley as an ingredient (i.e. cider, mead, wine).





CONTACT INFORMATION

For brewing questions, please email
WilliamsWarn at info@williamswarn.com or call
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For supply questions within the USA, phone Aaron Hyde
at Briess Malt and Ingredient Co. (504) 699 5436 or
email aaron.hyde@briess.com



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