WILLIAMSWARN

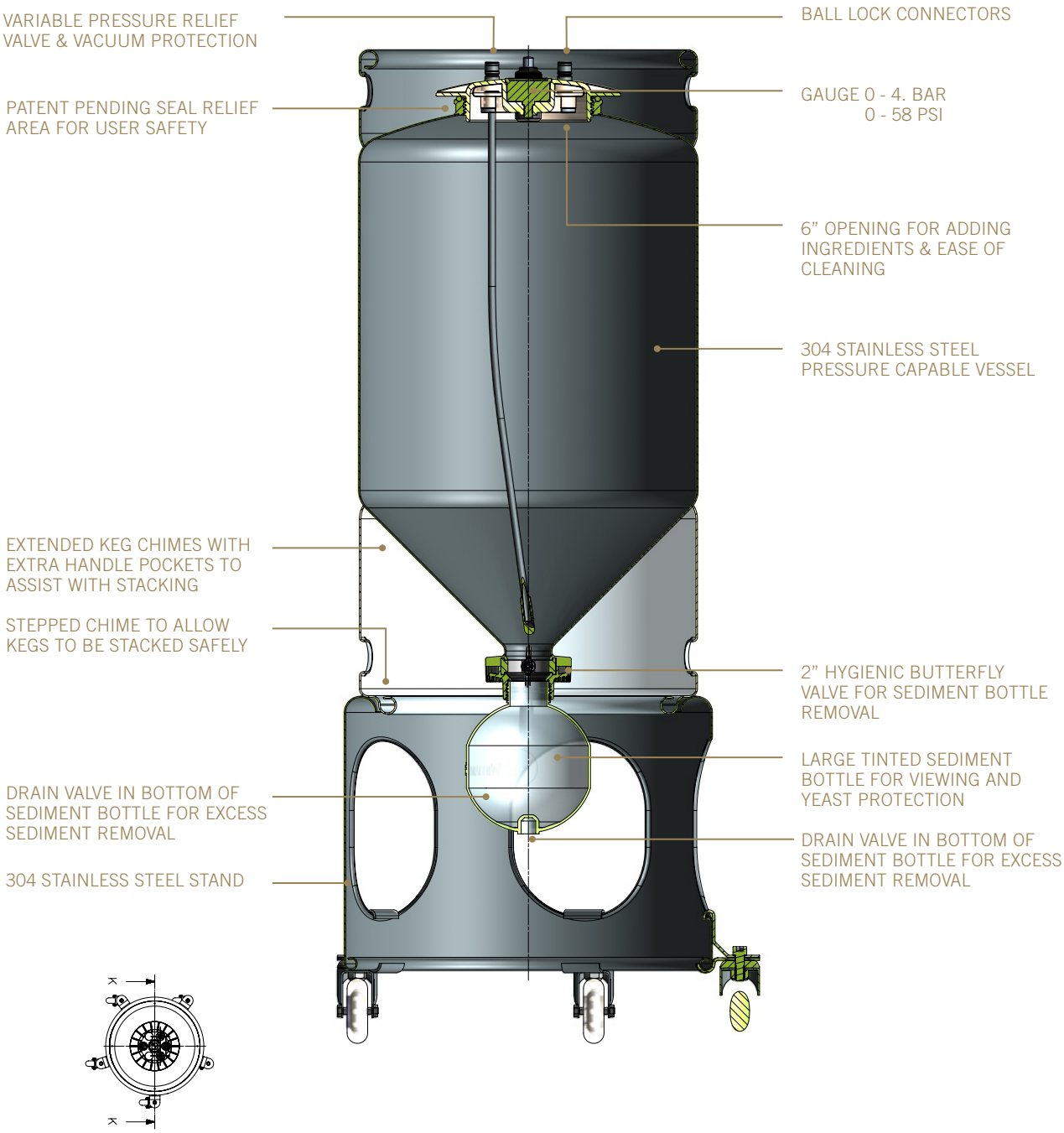
BrewKeg50™ User Manual

RECEIVE OUR 3 MOST POPULAR RECIPES.

Register your Brewery purchase for warranty at register.williamswarn.com/register-now/

OVERVIEW

BrewKeg50™ Structure



PROCESS SUMMARY

CLEAN

01. Rinse off the internal yeast ring – ensure the internal surface is visibly clean.
02. Add hot water and detergent – shake with lid on – take some liquid out the beer line.
03. Open the vessel butterfly valve and add hot detergent to the sediment bottle.
04. Rinse the detergent from the BrewKeg50™, sediment bottle and beer line / lid.

MIX

01. Add the extracts to the vessel with hot water and stir to dissolve.
02. Add any extra ingredients (e.g. hop tea).
03. Top up with water. Target 25ºC (77ºF) when full. Stir.
04. Rehydrate yeast in sediment bottle in 25ºC (77ºF) water and add to vessel.
05. Attach sediment bottle and open valve.
06. Attach lid, set VPRV to approx. 2.5 turns and set temperature to 18-28ºC (64-82ºF).

ADJUST

01. Maintain temperature in open area at 18-28ºC (64-82ºF) for 4 days.
02. Check and adjust the pressure as required after 24 hours. Target 1.5-2 bar.
03. Move to chiller at 1-4ºC (34-39ºF) when ferment is finished and chill for 12 hours.
04. Clarify beer – 2 step process. Cider does not require clarification.

DISPENSE

01. Close the vessel butterfly valve and remove the sediment bottle.
02. Remove the BrewKeg50™ from its stand and ensure CO_2 is connected to the in-port.
03. Connect draft tap to the out-port on the lid and pour a beverage.

Transfer the beverage to a D-type Keg (Sanke Keg), bottles or Cormelius kegs if required.

Instructional Videos available at williamswarn.com/The-WilliamsWarn/BrewKeg50

SETTING UP YOUR BREWKEG

Please watch the brewing videos on our website www.williamswarn.com/The-WilliamsWarn/BrewKeg50 before you make your first brew. This will make the instructions below easier to understand and assist you in making a great brew every time.

SETTING UP YOUR BREWKEG50™

Unpack the BrewKeg50™ from its packaging and undo the vessel lid and remove the sediment bottle. Put the lid back on. If you have bought a wheel set, attach these to the stand. See Figure 5. Place the BrewKeg50™ on its stand.

TO CLEAN THE BREWKEG50™ YOU WILL NEED:

- A BrewKeg50™.
- 2L (68 fl. oz.) kitchen kettle.
- 3L (101 fl. oz.) plastic jug.
- A non-scratch sponge.
- WW Brewing Detergent.
- 500ml rinse bottle.
- A cup.
- The dispense line with the plastic tap.

TO BREW YOU WILL NEED:

- A set of ingredients for the BrewKeg50™.
- A 2L (68 fl. oz.) kitchen kettle.
- Can opener, scissors, spatula.
- 3L (101 fl. oz.) plastic jug.
- A thermometer.
- WW Clarification agent.
- 100ml measuring cylinder.
- Hydrometer.
- The clarification pot.
- 500ml rinse bottle.
- The dispense line with plastic tap.
- A CO_2 cylinder and its BrewKeg50™ attachments.

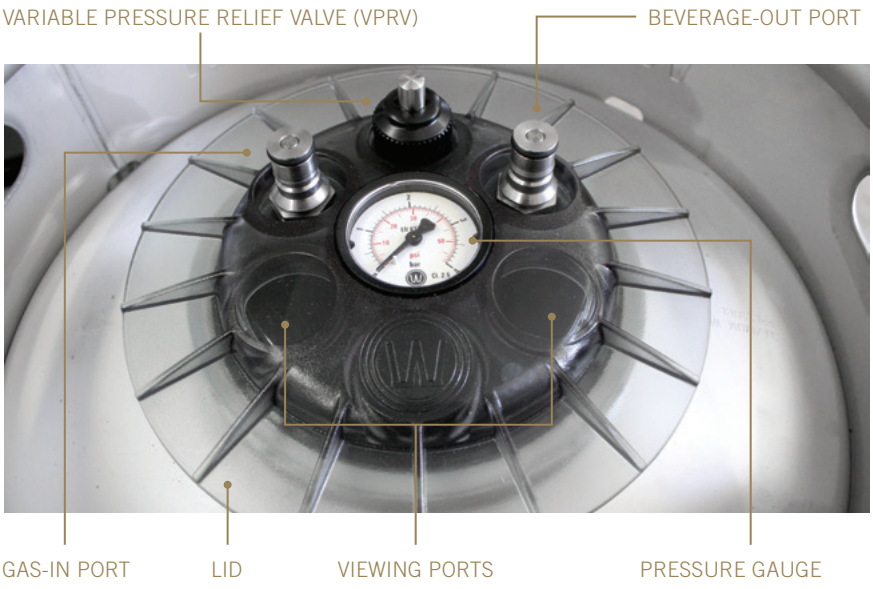


Figure 1: BrewKeg50™ Lid

BREWING INSTRUCTIONS

Step 1 – Clean

A. Boil 2L (68 fl. oz.) of water in the kitchen kettle.

B. Remove pressure in the vessel by pressing the button on the VPRV until all pressure is released. Remove the lid. Ensure the vessel butterfly valve is closed and remove the sediment bottle.

C. If you have access to a drain and water hose, place the BrewKeg50™ over the drain and open the butterfly valve. Use the water hose to rinse off any beverage residue or yeast ring from a previous brew. Drain all the liquid into the drain and close the butterfly valve. If you don't have access to a drain or water hose, then use the following method; take the BrewKeg50™ off its stand and place the 3L (101 fl. oz.) jug in the centre of the stand on the ground. Put the BrewKeg50™ back on its stand and add 2L (68 fl. oz.) of cold tap water to the vessel cone. Dip the non-scratch sponge into the water in the cone and scrub the entire internal surface of the vessel with the cold water. It is important to especially scrub off any yeast ring from a previous brew. Dump this water into the 3L (101 fl. oz.) jug by opening the vessel butterfly valve and then rinse the internal surface of the vessel with water using the 500ml rinse bottle. Close the vessel butterfly valve, remove the BrewKeg from its stand, remove the 3L 101 fl. oz.) jug and dump its contents.

D. Put the BrewKeg50™ back on its stand. Take the sediment bottle and ensure its bottom bleed valve is closed. Put the sediment bottle back on the vessel butterfly valve. Ensure the vessel butterfly valve is closed. Add 15g (1 heaped tablespoon / 1 cap full) of WilliamsWarn Detergent to the vessel. Then add the 2L (68 fl. oz.) of hot boiled water from the kettle into the vessel. Then put the lid on the BrewKeg50™ and close it well. Circulate the BrewKeg50™ to dissolve the detergent in the cone. Tip the keg upside down and circulate it so that the hot liquid soaks and cleans the underside of the lid and the vessel top area. Then hold the keg horizontally and shake it up and down so that the hot liquid circulates around the walls of the keg. The keg wall should be hot to the touch and the hot detergent will dissolve the organic residue. The target here is to get all internal surfaces to at least 80°C (176°F) for 2 seconds which is enough to pasteurise them. The pressure will build up as you shake.

E. Place the keg upright on its stand and attach the plastic beer tap and open it to take 150ml (5 fl. oz.) of hot liquid out the beer line into a cup. If no liquid flows you'll need to add some pressure manually by connecting your low pressure CO_2 to take out a sample. In the case of a stand-alone CO_2 cylinder, ensure there is 1.5 bar pressure on the low pressure gauge, connect the grey gas fitting to the gas port on the lid as shown in Figure 2 below and add some CO_2 for a few seconds and then disconnect the grey fitting. In the case of a bar or pub, you will need to connect the BrewKeg to the gas supply via a grey quick-disconnect for a few seconds as shown in the Dispense video for when beverage is being dispensed and Figure 3 below. In either case, once a bit of extra pressure has been added manually, take the 150ml (5 fl. oz.) of hot cleaning fluid out the plastic beer line attached to the out-port on the lid and as shown in the video. Close the plastic beer tap but keep it connected to the lid.

Figure 2: CO_2 bottle connected to gas in-port and plastic beer tap connected to beverage out-port.

Figure 3 Chiller dispense set up

F. While the BrewKeg50™ is on its stand, remove pressure by pressing the button on the VPRV. Open the vessel butterfly valve and allow the remaining hot liquid to flood the sediment bottle. Let it stand for 20 seconds and then drain 150ml (5 fl. oz.) of the hot liquid out the sediment bottle into a cup by opening its bleed valve. Note: by this time the temperature of the liquid is about 72ºC (158ºF) and the 20 seconds is enough to pasteurise the bottle. Do not add water above 85ºC (185ºF) to the sediment bottle as that will melt it.

G. Close the butterfly valve and remove the sediment bottle. Dump its contents and rinse the sediment bottle several times with cold water. Remove the BrewKeg50™ lid and rinse the internal surface of the lid with cold water. Then spray the beer out tube and plastic beer tap line with water using the rinse bottle. The plastic tap will need to be set to open to allow a flow. Once rinsed, remove the plastic beer tap from the lid.

H. We now need to rinse the detergent off, so if you have access to a drain and water hose, place the BrewKeg50™ over the drain and open the butterfly valve. Use the water hose to rinse all the detergent off the internal surfaces of the BrewKeg50™, drain all the liquid and then close the butterfly valve. Place the BrewKeg™ back on its stand ready the addition of the ingredients. Again, if you don't have access to such a drain or water hose, remove the BrewKeg50™ off its stand and place the 3L (101 fl. oz.) jug in the centre of the stand on the ground. Put the BrewKeg50™ back on its stand and open the butterfly valve. Then rinse the rim thread with water from the rinse bottle. Then rinse the entire vessel internal surface area. Then close the butterfly valve, take the BrewKeg50™ off its stand, remove the jug, dump its contents and put the BrewKeg50™ back on its stand, ready for the addition of the ingredients.

I. Note: Every 5th brew or so its good practice to clean the vessel lid seal and its groove on top of the vessel rim manually with some detergent and then rinse and put it back in its groove.

Step 2: Mix (Add ingredients)

A. Boil 2L (68 fl. oz.) of water in the kitchen kettle.

B. For malt extract beer brews, firstly remove the black lids on top of the liquid malt extract cans and remove the yeast sachets.

C. Open the 2 cans of liquid malt extract (LME) with the can opener and add the extract directly to the BrewKeg50™ cone. Keep the cans and their remaining residue. Fill each can halfway with the boiled water from the kettle and dissolve the extract residue by stirring with the spatula. Hold the cans at the top area where they are less hot and add the contents of both cans to the BrewKeg50™. Add the remaining boiled water in the kitchen kettle to the extract in the cone and stir it all with the spatula and dissolve it completely. It is important to scoop into the area above the valve to dissolve any settled extract there. Then add 2L (68 fl. oz.) of cold water and stir that in.

D. Use the scissors to open the dry malt extract (DME) and add these to the BrewKeg50™. Stir the DME into the liquid with the spatula. You may find that there are a few lumps that don't dissolve but this is acceptable as they will dissolve themselves over the next few hours.

E. For cider brews, just open the two cider pouches with the scissors and add to the

BrewKeg50™. Open the 2 yeast nutrient sachets with the scissors and add these to the cider extract in the BrewKeg50™. Then add the 2L (68 fl. oz.) of boiled water from the kitchen kettle.

F. At this point you can add extra ingredients. For example, a hop tea made with e.g. 50g (1.8 oz.) of pellet hops in a French Press coffee plunger. For more examples for these sorts of techniques, visit the WilliamsWarn® website and download our Advanced Recipes. www.williamswarn.com/The-WilliamsWarn/Recipes

G. You can now top up to the 50L (13.2 US gallons) full mark with water using the jug or more conveniently from a water hose. The target temperature when full is 18-28ºC (64-82ºF). If your water source is cold e.g. in winter and between 12-16°C (54-61°F), add another 2L (68 fl. oz.) of boiled water from the kitchen kettle during your top up to the 50L mark. If it is between 8-11°C (46-52°F) out of the tap then include another 4L (135 fl. oz.) total of boiled water from the kitchen kettle during your top up to the 50L mark. Otherwise just top up with ambient tap water. This target temperature range is very important as it helps to ensure a quick onset of fermentation.

H. The fill level is marked on the outside of the BrewKeg50™ and is 50L (13.2 US gallons). Internally the fill level is 11cm (4.3") from the bottom of the vessel rim thread. Just before you get to the full level, leave a little room for the 200ml (6 fl. oz.) of rehydrated yeast and stir the contents to even out the temperature.

I. Ensure the fluid bleed valve at the bottom of the sediment bottle is closed and then add 200ml (6 fl. oz.) of water at 25°C (77°F). Open both yeast sachets with the scissors and add the yeast to this water. If the water temperature is more than 40ºC (104ºF) you will kill the yeast. Swirl the sediment bottler for 30 seconds to rehydrate the yeast. After a minimum of 30 seconds, add the rehydrated yeast directly to the top of the wort in the BrewKeg50™. Screw the sediment bottle onto the vessel butterfly valve under the BrewKeg50™ and then open the butterfly valve fully so that the liquid wort fills the sediment bottle. Leave the valve open. Then top up to the 50L fill mark. You have now made 51.8L (13.7 US gallons) of wort, but during the process some yeast gets dumped and the final volume will be 50L (13.2 gallons).

J. Ensure the lid seal is on the vessel rim groove and then screw the lid on well. Set the Variable Pressure Relief Valve (VPRV) to 2½ full turns. The BrewKeg50™ is now at its fermentation stage. Try to maintain a temperature range between 18-28ºC (64-82ºF). At this temperature range, WilliamsWarn ales, lagers and ciders will all ferment in about 4 days. You can of course optionally ferment lagers at a lower temperature but do start at this warmer temperature at yeast pitching and then adjust your ambient temperature down. (After several brews you will know how many turns of the VPRV you should set to achieve the carbonation level you want to achieve. Note: Each VPRV will be slightly different depending on their natural spring tension).

Step 3: Adjust

FERMENTATION

If you ferment WilliamsWarn brew kits in the range of 18-28°C (64-82°F), the process will be as follows:

Day 0 to Day 4	Monitor temperature and pressure during fermentation and determine when fermentation is finished.
Day 4	Chill to 1-4°C (34-39°F)
Day 4.5	First clarification for beer, and Dispense stage cider.
Day 5.5	Second clarification for beer.

A. Monitor the temperature during fermentation and maintain a range between 18-28ºC (64-82ºF). This will ensure a strong fermentation for all beer styles. You can ferment lagers at lower temperature if desired but for dry yeast we recommend pitching at this temperature and then adjusting your temperature down with your temperature control system. Fermentation will take longer at colder temperatures.

B. After about 12 hours after pitching the yeast, if you shine a torch on the sediment bottle, you should see the signs of the beginning of fermentation. After 24 hours there should be a lot of CO_2 being produced by the yeast and you'll be able to see foam on the surface through the viewing ports on the lid if you shine a torch through one of the ports. Please see the Adjust video for images of

how the brewing should look with respect to CO_2 bubbles rising and foam forming on the surface of the beverage. For beer brews there should be foam over a large part of the surface. For cider the foam forms and dissipates quickly.

C. At the temperature range of 18-28ºC (64-82ºF) all WilliamsWarn kits should be finished in 4 days. If you ferment the lagers colder at e.g. 15°C (59°F) for 3 days and then 18°C (64°F) for 3 days, they will take about 6 days.

D. After 24 hours the pressure will have built up and the beverage is carbonated. Monitor the pressure during fermentation. Aim for fermenting at 2 bar and adjust the VPRV to achieve this after 24 hours once pressure has built up. We aim at a higher pressure during fermentation compared to dispense because once chilled the pressure will drop as the CO_2 becomes more dissolved in the beverage at the colder temperature. If you prefer lower carbonation, brew at a lower pressure to suit your tastes. If the pressure is higher than your target, turn the VPRV anti-clockwise as this will release some pressure. Conversely, if you can hear or smell CO_2 emitting out the VPRV and you aren't at your target pressure, then turn the VPRV clockwise to establish a new set point then come back in a few hours and check.

E. At the recommended temperature range, after 4 days for WilliamsWarn extracts, you should able to cool the beverage. But first check fermentation is finished. Fermentation is finished when there is a decent amount of settled yeast in the sediment bottle and only the odd bubbles rising once and a while from the sediment. Also, if you look on the surface of the beverage through the viewing port with a strong torch, you will see that the foam that was there during a beer fermentation has collapsed to a small amount about 2.5 cm (1 inch) in diameter with almost no activity visible. Fermentation is officially over when the Specific Gravity (SG) no longer reduces and is constant. If you need to take a sample to check the SG (or for excise tax reasons) attach the black plastic tap, take a sample, degas it and measure the SG as shown in the Adjust video online. The alcohol level can be calculated by the (OG-SG) x 131.25. The OG is the original specific gravity reading in the wort measure before fermentation and the SG is the specific gravity measured in the final beverage, both at 20°C (68°F). e.g. (1.045-1.010) x 131.25 = 4.59% alcohol by volume. If you think fermentation isn't finished, wait another day before cooling.

F. To cool, wind the VPRV right down to its closed position and move the BrewKeg50™ into a chiller or fridge. The ideal temperature would be 1-4°C (34-39°F) for the next clarification step. Wait 12 hours before moving to the next step.

CLARIFICATION

A. A WilliamsWarn cider kit does not need clarification because once it is cold, the yeast should all settle out. So just close the vessel butterfly valve, place a jug under the sediment bottle and then remove the sediment bottle as shown at the beginning of the Dispense video. Dump the sediment, rinse the sediment bottle well with water and store it until the next brew. Rinse the butterfly valve with some water from the rinse bottle. Take the BrewKeg off its stand and the cider keg is ready for dispense. Beer on the other hand requires clarification.

B. Beer Clarification 1: Bleed 200ml (7 fl. oz.) of the settled yeast out of the sediment bottle into a cup by opening the bleed valve under the sediment bottle. Rinse the bleed valve and then close the BrewKeg50™ butterfly valve above the sediment bottle.

C. Ensure you have your CO_2 supply connected to a grey quick-disconnect fitting. In the example in our instructional video we use a portable CO_2 cylinder set at 1.5 bar (22 psi) pressure. A bar or restaurant can use its premises CO_2 supply.

D. Measure 60ml (2 fl.oz) of clarification agent into the 100ml measuring cylinder and add this to the clarification pot and put its lid back on. Then connect the grey quick-disconnect fitting to the port on the clarification pot lid. Press the VPRV button and release CO_2 out of the BrewKeg50™ until the gauge reads 1 bar (14.5 psi). The principle is that the vessel needs to be 0.5 bar (7 psi) lower in pressure than the CO_2 supply low pressure to be able to dose clarification agent in. Then connect the black quick-disconnect fitting to the out-port on the BrewKeg50™ lid. Bubble the agent into the beer for 10 seconds. You must hear the bubbling to confirm it is working. You can also

see the bubbling through the viewing ports on the lid if you use a light (see video). Note that the BrewKeg50™ pressure will increase during bubbling as seen on its pressure gauge.

E. Remove the grey quick-disconnect fitting from the pot lid, remove the clarification pot lid and add some rinse water to the pot with the 500ml rinse bottle. Wash down the side of the pot. Then put the pot lid back on, reconnect the grey fitting to the pot lid port and blow that water through the lines for a few seconds and then remove the grey fitting from the pot lid again. Then remove the black quick-disconnect fitting from the BrewKeg50™ lid out-port and connect the grey fitting to the gas-in port of the BrewKeg50™ lid. Open the sediment bottle valve and allow a new amount of sediment to fall into the sediment bottle over the next 24 hours. The pressure maintains the natural carbonation.

F. Beer Clarification 2: After 24 hours, repeat the above step from B to E, but this time with 40ml (1.4 fl. oz.) of clarification agent at step D.

ALTERNATIVE CLARIFICATION METHOD

A. There is an alternative clarification method that may also be employed that involves the dumping of the naturally sediment yeast prior to clarification. This is the method used with a BrewMaster model brewery because the sediment bottle on that model doesn't have a bleed valve. This means that after dumping the naturally sediment yeast, the sediment from the subsequent two clarifications has more room to fall into in the sediment bottle and some BK50 brewers feel this leads to a quicker clarification.

B. If you want to use this method which is also shown on our online video "Step 3 Adjust", once the yeast has naturally sedimented after fermentation and the BrewKeg50™ has been cold for 12 hours, close the valve on the sediment bottle. Then put a jug under the sediment bottle, carefully remove the sediment bottle and take it to a sink and dump the contents. Give the bottle a good rinse with water and also take some water out the bleed valve. Then give the valve under the tank a good rinse and using your draft beer tap fill the sediment bottle with beer or foam (if your tap has that function). This is to remove all air from the bottle and either method works. Then carefully put the sediment bottle back on the BrewKeg50™, and with the tank valve still closed, perform the first clarification as described previously above. At the end, remember to put the gas pressure back on the gas-in port, open the tank valve to the sediment bottle and then let the beer sit there for 24 hours. After this time you can then perform the second clarification and 24 hours after that, the beverage should be ready for dispense.

Step 4: Dispense

A. After another 24-36 hours the beer will be ready for dispense. For WilliamsWarn cider this stage will coincide with the 12 hour mark after cooling, as that beverage doesn't need the clarification step. In both cases the sediment bottle will be quite full but you should see a clear demarcation line between the sediment and the beverage above it. If the sediment bottle is completely full and the sediment extends up into the valve, then drain some sediment out the bleed valve into a cup.

B. Close the vessel butterfly valve, place a jug under the sediment bottle and then remove the sediment bottle as shown at the beginning of the Dispense video. Dump the sediment, rinse the sediment bottle well with water and store it until the next brew. Rinse the butterfly valve with some water from the rinse bottle.

C. If you need to take a sample then connect the plastic beer tap line to the out-port on the lid and pour a sample into a glass as shown in the Dispense video.

D. Take the BrewKeg50™ off its stand and the beer keg is ready for dispense.

E. For a stand-alone set-up, ensure your low pressure CO_2 supply and dispense tap are connected as shown in the Dispense video and Figure 2 below. For a bar or pub with a chiller and draft beer system connect as shown in the video and Figure 3.

F. Open the beer tap to allow flow of the final product into a glass.

You can also transfer beverage brewed in a BrewKeg50™ into a D type keg (Sanke Keg) or bottles or Cornelius kegs. See the dispense video for more details on those transfers.

Figure 4: Clarification pot set up

Fig 5: Stand wheel set up

FINAL WORDS

These instructions represent a means for anyone to make great beer or cider the first time they use a BrewKeg50™. As you brew more, you may find you come up with your own tweaks to what is written here or develop radically different methods that suit you better. As long as you are happy with the final beer or cider, feel free to make you own adjustments to the process if you feel the need or see an easier way to brew using your set up.

NOTES

NOTES