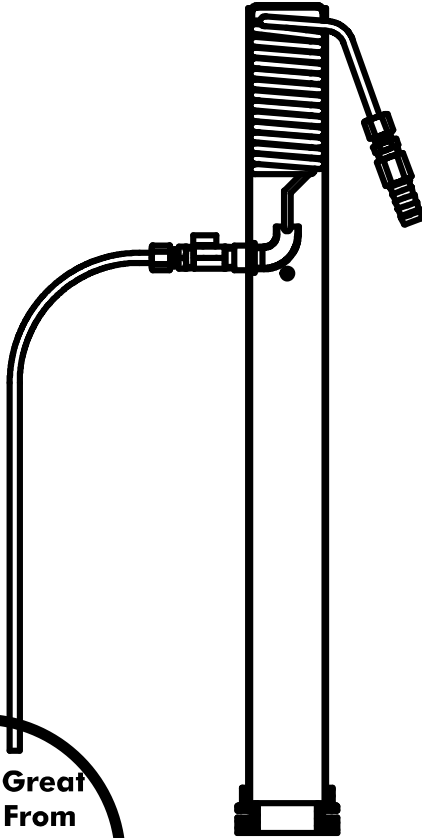


alcoⁱengine



Another Great
Product From

KegLand



**Aussie
Designed**

Most 'Turbo Yeast' has proper directions printed on the packet – follow these. If it does not, then the procedure below will work.

First, you need to clean and sterilise a 23L fermenter (5 gallon). Use a cleaner such as KegLand StellarClean Powdered Brewing Wash ([KL05494](#)) and then sterilise the fermenter with a steriliser such as StellarSan ([KL05357](#)). These can be purchased from your local KegLand Distributor.

Dissolve 8Kg of plain white sugar or dextrose into the bucket and stir until fully dissolved in 15Liters of room temperature to warm water. Make sure that the spoon you use to stir it with has been sanitised the same way as your fermenter. Add a pack of 'Turbo Yeast' and stir for about a minute. Lalvin EC-1118 Yeast ([KL12782](#)) would be a suitable 'Turbo Yeast' to use for fast fermentation. It is suggested that 5g of yeast nutrient ([KL14724](#)) be added at the start of fermentation to ensure the yeast have enough micronutrients to have a healthy fermentation. Once you have added your yeast to the fermenter, attach the lid to your fermenter and put a suitable airlock in the lid ([KL01595](#)) Leave the fermenter for about a week at room temperature (around 25C) and it should be ready. Check with a hydrometer to make sure that it is about 0.980. If the wash does not go below 0.990, then you will not get the full amount of alcohol out of it. Leave it for a few extra days. If it does not change, then please contact your KegLand distributor for advice. If you are fermenting in a cold climate, you may need to keep the wash warm by keeping it somewhere warmer or adding a heating belt and temperature controller ([KL01953](#) and [KL01946](#)). Your home brew shop can give more advice on fermenting washes, as well as other recipes.

Calculating How much product should be collected from distillation

The volume of product expected to be collected from the distillation is able to be calculated. It is important to measure the amount of ethanol in your wash so that you can get a rough idea of how much distillate you expect to recover from distillation.

To calculate this expected volume of distillate you will need a hydrometer ([KL04312](#)). You will need to take two gravity readings with the hydrometer. Once prior to fermentation and once after fermentation has finished. Then input these two numbers into an Alcohol by Volume ABV calculator to give an ABV. The amount of ethanol in the wash can be calculated using this ABV. For example, if your ABV is 12% and you have a 20L wash then use the following calculate to determine the volume of ethanol in the wash.

$$\text{Volume Ethanol in wash} = 20\text{L} \times 0.12 = 2.4\text{L}$$

You can then use multiply this volume of ethanol by the purity of the distillate to determine how much ethanol you would expect to be collected from the distilling process. For example, if you are recovering 95% ethanol. Measured using an alcometer ([KL04305](#)) then the expected final concentration of distillate can be calculated via the following:

$$\text{Volume Ethanol Collected} = 2.4\text{L} \times 0.95 = 2.28\text{L}$$

Distilling the Wash

1. Pour the wash into the boiler. Be careful not to get yeast from the bottom of the fermenter into the boiler, as this can produce off flavours. The more yeast you can separate from the liquid wash the better your results will be. Some customers use finings such as gelatine to assist this process.

DO NOT OVER FILL THE BOILER

2. It's recommended to use 'Distilling Conditioner' from a home brew shop. This will stop the wash from foaming and gurgling in the condenser, otherwise known as "puking". This is sometimes necessary and greatly depends on the yeast strain that you have used and what raw ingredients you have made your wash with. If you have issues with the wash foaming up the still then you will notice the liquid you collect will start to look cloudy and not clear.

IF YOU DON'T DO THIS, IT WILL NOT WORK!

3. Remove the brass nut from the thread on the bottom of the reflux still.
4. Insert the thread of the reflux still through the 47mm hole in the distillation lid ensuring that the silicone gasket is on the outside of the lid. Secure the reflux still to the distillation lid by tightening the brass nut onto the thread on the underside of the lid.
5. Clamp the distillation lid to the top of the boiler.
6. Screw on the appropriate flow control device (0.6mm or 1mm) for your purpose.
7. Make sure the outlet ball valve is closed.
8. Turn on the boiler and set its temperature to 100°C or HH. All elements can be used to bring the temperature up to boil, however when distilling a spirit run it is best to use the minimum amount of power to keep the liquid in the boiler gently boiling.
9. Turn on the thermometer.
10. Place a clean cup or other collection vessel under the copper pipe at the side of the still. Preferably use glass, as it will not smell or taste like some plastics may after extended exposure.
11. When the thermometer reads about 50C, turn on the cooling water flow (this will take approx. 10mins on a 5L boiler or 45mins on a 25L boiler.) and this is based on your boiler being 2000watts. If you have a lower powered boiler it might take a bit longer. If you are using a pump for recirculating water, it is OK to turn on the cooling water BEFORE the boiling starts and before you get to 50C. The only reason we do not say turn the water on before 50C is because we want you to save water.
12. The water flow at the still head is very easy to setup. The only real requirement is that you reach a minimum water flow speed of about 8 liters per minute. There is no maximum water flow speed with this still design so you can run the water as fast as you like as long as you are meeting the minimum flow required. If your flow of coolant to the still head is not great enough you will start to get vapour evaporate from the still head and you will lose your valuable spirit to

atmosphere. This can be dangerous around open flames! So it's always better to use a bit more flow rather than a bit less.

13. It should also be noted that your coolant water must stay below 35C to get good results. If your cooling water gets too hot you will also start to lose vapour out of the top of the still head and this will also result in poor yield for the same reason.
14. After the liquid starts boiling, you will notice that the thermometer temperature will rapidly go up. Within a few minutes it should slowly come down again to a stable temperature between 77C and 80C. If it doesn't drop below 80C within 10 minutes, see the troubleshooting guide.
15. 10 minutes after it starts boiling, put on some heatproof gloves and open up the valve completely.
16. Open your ball valve & collect this until it stops smelling like nail polish remover (about 80ml on a 5L wash, or 150ml on 25L). This is the 'heads' and should be discarded. **WARNING – NEVER DRINK THIS LIQUID AS IT COULD BE POISONOUS** (particularly if you have fermented fruit instead of sugar).
17. Swap the collection jar to a clean one. The alcohol collected at this stage is your main run and is good to drink, it should be at about 92% alcohol.
18. Make a note of the thermometer reading at this point.
19. When the temperature rises 1 degree C from the reading you recorded at step 13. It's time to stop collecting the main run or you will start to collect smelly tails and lower percentage alcohol. You should have approx. 800ml from 5L wash, or about 3.8L from a 25L wash. This will take approximately 40mins on a 5L boiler, or 3 ½ hours on a 25L. If it seems to be taking a lot longer than this, then please see the troubleshooting instructions in the other manual.
20. Turn off boiler
21. Turn off the cooling water
22. Dispose of the liquid remaining in the boiler. It has nothing usable remaining in it.
23. **RINSE THE INSIDE OF THE STILL THOROUGHLY AS SOON AS IT IS COOL ENOUGH TO DO SO.** See the other instruction manual on how to do this.

WARNING – Be careful when emptying the boiler as the liquid is very hot. Wear heatproof gloves when removing the lid as steam may escape. Let the boiler sit for a few minutes after the power has been switched off before removing the lid.

Distilling the Alcohol

If you have collected the alcohol as per the instructions above, then you will have a quantity of alcohol at approximately 92%. This must be diluted to 40% or below before flavouring or drinking. For each litre of 92% alcohol, add 1.3L of clean water. You will then end up with 2.3L of 40% alcohol. For 50% alcohol, add 800ml of water to each litre of 92% alcohol. For 30% alcohol, add 2L of water to each litre of 92% alcohol. You should check the final strength with an alcometer (available at home brew stores) to measure the alcohol strength. There are also helpful dilution calculators that can be found on homebrewing forums or homedistilling websites.

Flavouring

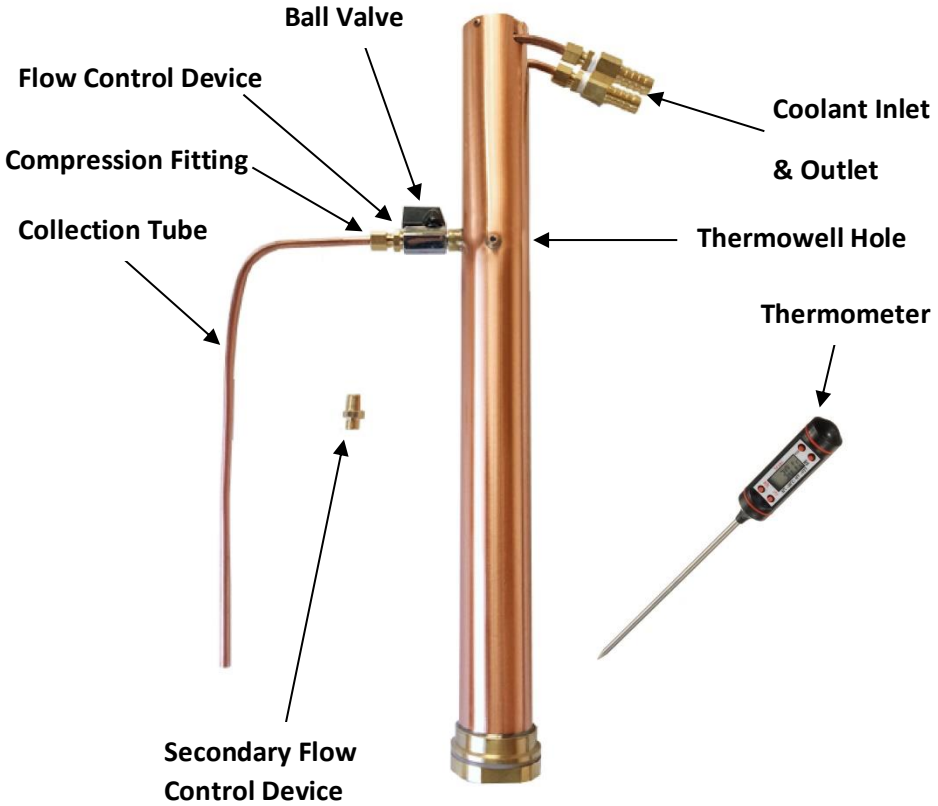
To flavour your pure spirit and turn it into a flavoured spirit like rum or whiskey, you need to add an essence.

Essences are available from home brew stores in pretty much any flavour you can think of. They all have individual instructions painted on the bottle, but you often add the contents to a bottle of 40% alcohol, give it a shake and you have the spirit you are after.

It is ready to drink straight away, but does improve over the next few weeks.

Liqueurs often need some additional sugar or milk added, and this is specified on the bottle.

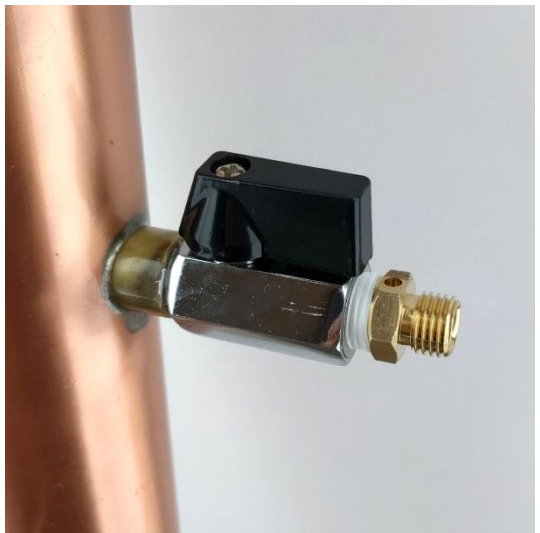
Assembly Instructions



1. This reflux still should include all the components show in the image above.
2. When the still arrives it will arrive in a few separate parts that you will need to assemble. Its important that you assemble these components carefully and we recommend using Teflon tap on the threaded fittings.

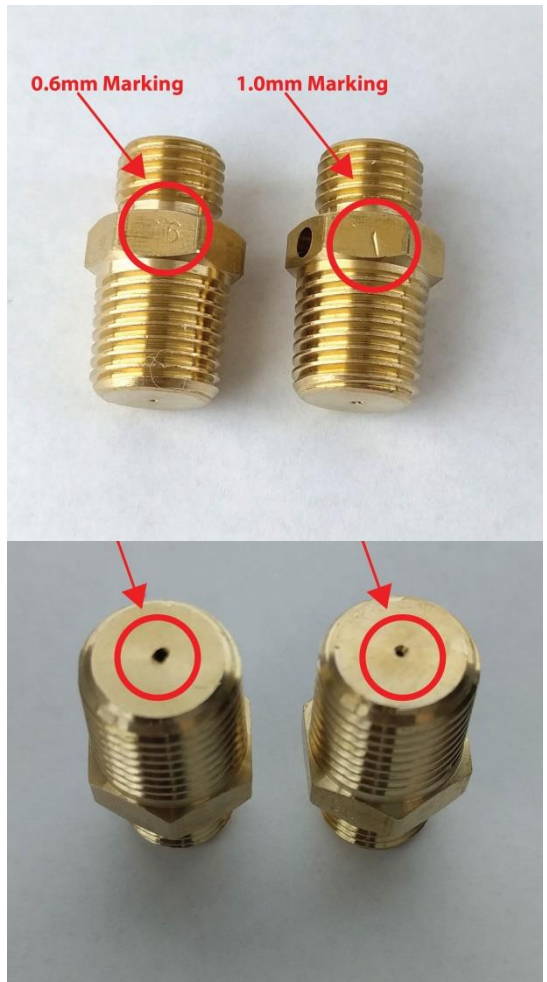


3. Use Teflon tap to cover the thread of the ball valve then screw it into the side of the still body. See pictures to right. No need to use a spanner. Just finger tight is fine here. Over tightening might damage the thread.
4. Next get some Teflon tap and attach the Teflon tape to the thread of the flow control device. Then screw this into the ball valve as shown in the picture to the right.



5. As shown in the picture to the right, you will receive two flow control devices with this still. You will receive a flow control device with a 0.6mm hole and also another one with a 1.0mm hole. The hole size is what dictates the speed at which the spirit flows out of the still. As a result by using a larger flow you will get faster collection of spirit but at the same time you will get a reduction in purity. We have included both flow control devices so you can either use the 0.6mm flow control device which will mean your distillation process will take longer but you will get higher purity. We have also included the 1.0mm flow control device so you can swap this one into the system and get lower purity but it will allow you to collect the spirit faster. Some customers use the 1mm hole for stripping runs which.

6. The different flow control devices are marked discretely with a small punch on the side of the device but if you have good eyesight you can probably see the difference in hole size with your naked eyes.



7. Lastly you need to attach the collection tube with the olive fitting. Tighten up this fitting onto the flow control device and give it a small tighten with a spanner/shifter. Do not over tighten as its easy to damage the soft brass fittings.
8. Please note it is important that the breather hold is unobstructed and is also facing UPWARD. The breather hold is so unwanted sulphide smells escape to atmosphere.



Troubleshooting Issues

Before lodging a warranty claim ensure you have referred to the troubleshooting checklist on page 15.

NEVER REMOVE THE MESH FROM THE COLUMN!

If the temperature is not stabilizing below 80C

If the temperature does not drop below 80C within 10 minutes something is wrong. Check that the column is level, check that the packing is all in one place. Check that no vapour is escaping from anywhere, particularly the top of the column. Check that the valve is closed. Check that the wash you are boiling contains at least 10% alcohol – sometimes the wash will get ‘stuck’ and not ferment properly, particularly if it is cold. If none of these fix it, then try pushing mesh further into the column about 2cm. **DON'T REMOVE THE MESH.** If this doesn't work, consult your dealer for advice.

If you are not getting at least 90% alcohol

Is the temperature staying below 80C? If not see above. Make sure you finish collecting the spirit before the temperature rises above 82C. Measure how fast the alcohol is coming out of the still. If it is still coming out faster than 1.5L per hour, then it will need to be repaired – contact your dealer.

If you are not getting as much alcohol as expected

You should get over 3L of 92% alcohol from a 25L wash if you are using 6Kg of sugar, or over 3.8L if you are using 8Kg. This can be used as a rough guide, however, ideally the amount of ethanol in the wash should be determined using a hydrometer. This will give you a good idea how much alcohol you can expect to recover from distillation.

If you are not getting this, make sure that there is no steam coming out anywhere – check carefully at the top column, as it can be hard to see. You will need to increase the water flow a little if there steam at the top of the

column. Check that there is no steam leaking around the lid of the boiler or anywhere else. A VERY small of vapour leaking anywhere will result in a LOT of alcohol loss. You should be able to smell it. Measure how fast the alcohol is coming out of the still. If it is coming out faster than 1.5L per hour, then it will need to be repaired – contact your dealer. Make sure that before distilling the wash, that it has completely stopped bubbling, and use a hydrometer to check that it is between 980 and 990. If not, the wash has not produced the correct amount of alcohol. If none of these fix it, then try pushing the mesh further into the column about 2cm. DON'T REMOVE THE MESH. If this doesn't work, consult your dealer for advice.

If there is steam coming out of the top of the still

Cooling water is too slow – increase the flow a little until the steam stops. If you are using a water pump, it may not be powerful enough. You need a pump capable of at least 3000L/hr or a head height of at least 30m.

If the product still comes out hot

This is not normal for this type of still. It helps to evaporate any light volatiles that can cause smells and tastes.

If the product is coming out very slow

This still set is to run are around 1.2L per hour. After you have opened the tap, you would expect it to take around 40mins to get to 800mL from 5L boiler, or about 3 ½ hours to get 3.8L from a 25L boiler. Measure the output by placing a 1 cup measure (250mL) under the output with it still running. Time how long it takes to fill – it should take about 12 minutes. If it takes longer than this, then you will need to clean the orifice.



Very carefully clean out the tiny hole with a needle. DO NOT MAKE IT BIGGER, just gently clean it

Distillate is coming out the top of the still

If spirit is coming out the top of your still, this can occur due to the following:

1. You have too much heat and vapour being generated by the boiler. The boiler should be set at 2000W or less. Ideally the minimum power should be set to maintain a boil.
2. The still is too tightly packed and you might have to remove some packing from the column.
3. You may have not used a distilling conditioner and you are getting a boil over.
4. You may have overfilled the boiler.

5. You may have dirty packaging that is causing a blockage. Remove and thoroughly clean the packing.
6. The packing may not be evenly distributed in the column. Remove the packing and make sure it's distributed evenly in the column.

If the wash in the boiler is frothing up too much, you must add a capful of 'distilling conditioner' from a home brew shop. If it continues to do it, then the mesh will need to be loosened a little – pull it out of the column about 2cm. **DON'T REMOVE THE MESH.** If this does not fix the problem, please contact your dealer.

TroubleShooting Checklist

Running through this troubleshooting checklist will assist us with troubleshooting any issues if lodging a warranty claim. Please ensure you have thoroughly checked through this list prior to lodging a claim.

1. What pump are you using?
2. What is the coolant water temperature before and after running through the condenser coil in the still?
3. What is the cooling water flow rate after running through the condenser coil in the still?
4. What temperature is the still set to and how much power is the boiler set to?
5. Which output orifice is being used and is it clear from blockages?
6. What was the recipe used to make the wash?
7. What was the ABV of the wash determined by hydrometer readings before and after fermentation?
8. What is the purity of your distillate?
9. Has the still been cleaned recently?
10. Is the copper packing evenly distributed throughout the still, packed not too tight and with no blockages?
11. How much wash is in the boiler and has distilling conditioner been used?

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