



## HOW TO RUN MY BOKA STILLS

Always have a Fire Extinguisher at hand when you run your still.

Always run your still in a well- ventilated area.

Please DO NOT EXCEED 2000W of constant heating in your boiler. The Boka column is designed for use on boilers with a volume of 20-60 litres and a constant heat source of 1800-2000W.

Don't taste too much of the product! 😊

**VERY IMPORTANT:** I use sunflower oil to lubricate the press fit fittings and, although I clean the column thoroughly afterwards, traces of the vegetable oil may remain in the column and I recommend that you do a cleaning run with vinegar or a sacrificial alcohol run before you use the column for alcohol or water distillation. The Stainless scrubbers in the column is also just "as is" out of the factory and that is another reason to do a cleaning run.

**You can watch this video (link below) on how to do a cleaning run:**

[https://www.youtube.com/watch?v=P3GZ\\_zrB61E](https://www.youtube.com/watch?v=P3GZ_zrB61E)

## The wash

1. It is best to use a sugar wash to distil with in your Boka still, as this still will give you a NEUTRAL spirit and will remove all flavour from your alcohol. If you want to retain the flavour of your original fermentation, use a POT STILL.
2. **CLEAR** the wash before you distil it. Let the wash sit a few days after the completion of the fermentation or use a clearing agent like Turbo Clear or Bentonite. You will know if a wash has cleared when you can see the bottom of the fermenter through the wash. If you distil an uncleared wash it will foam up in the boiler and will foul up your column packing and even your head. The lees/yeast sludge of an uncleared wash will also burn on at the bottom of your boiler. It will be very difficult to clean this mess and to get rid of the smell and it can even taint a few distillations after that.

## **Fill the boiler**

1. Fill the boiler to the MAX mark indicated on the boiler (Turbo 500).
2. Do not overfill the boiler.
3. Leave at least 10cm head space between the wash and the bottom of the column.
4. Do not fill the boiler to less than half of its capacity or you will run the risk of running it dry.
5. Do not distil a wash stronger than 30% ABV. If possible, dilute it to 20% ABV.
6. If you are using a NEW BOILER please put a few marbles or ceramic saddles in the boiler with the wash to prevent [explosive boiling](#).
7. Please use a boiler with a constant heat source NOT EXCEEDING 2000W.

## **Attach the column to the boiler lid**

Unless you are using the still outside in VERY windy conditions DO NOT INSULATE THE COLUMN please.

Your Boka Column was designed to perform at its best with Stainless Scrubbers or SPP. **Please** do not replace the packing with anything else than 350-370g of stainless scrubbers or 1.5 to 2 litres of SPP.

1. If you use Stainless Scrubbers as packing, pack your column before you attach it to the boiler lid.
2. Lay the column on its side (DO NOT DO THIS IF THE COLUMN HAS BEEN FILLED WITH SPP\* – you will never find them all again!) and unscrew the nut at the bottom. (\*SPP= Spiral Prismatic Packing).
3. Put the black seal over the threaded part of the column and seat it in the flange. The seal must be between the column flange and the lid and NOT between the lid and the nut.
4. Put the boiler lid on and screw the nut back on. Not too tight as you may distort the seal.
5. Put the column upright and let it stand on the lid (yes, the lid can take it) on a CLEAN floor (I always place an old towel on the floor) and MAKE SURE the column is packed.
6. **IMPORTANT – IF YOU USE SPP** - With the column upright you can now push a stainless scrubber down to the bottom of the column and start filling it with the SPP. With SPP it is best to stand the column in a box or bucket or something that can catch any SPP that spills over. Tap the column with a wooden spoon while filling it up with SPP or shake it up

and down GENTLY while filling it. You can also watch this video on how to fill your column with SPP: <https://www.youtube.com/watch?v=FM2ii9zBYE>

7. Attach the lid with the column to the boiler and try to support the column in the middle. If you do not support the column you will see it sway during distillation. This is not dangerous, but it is not good for the lid of your boiler.
8. Once you have the column on the boiler put the seal on the top flange of the column and put the Boka head on top of the column and secure it with a tri-clamp. You do not need a seal for the top cap on the head, just put the tri-clamp on to keep the condenser coil in place. The top cap on the head is a vented cap and you don't need a seal for that connection.

### **Running the still**

A Boka Still is a LIQUID MANAGEMENT (LM) STILL and the percentage and purity of the alcohol you collect **depends on the rate at which you collect the alcohol**. The optimum collection rates for a 1 metre, 50mm (2") LM Still is 500ml per hour (**± 3 DROPS PER SECOND**) with Stainless Scrubbers and 1200ml per hour with SPP (Spiral Prismatic Packing).

1. Connect your coolant tubes before you switch on the boiler so that you are ready when the wash starts to boil. Connect the cold water tube from your water source to the hose barb of the outer coil (will usually have a blue cable tie around it).
2. On a Turbo 500 or Copperhead boiler with a 25 litre wash it takes about 90 minutes to bring the wash to a boil.
3. Fully close the needle valve and place the thermometer in the thermowell.
4. When the bottom half of the column gets so hot that you cannot touch it anymore, it is time to open the coolant water.
5. Make sure you have a minimum water flow of at least 2 litres per minute or more. The Boka Still does not have a maximum water flow and as long as the condenser coil gets enough water through it to achieve full reflux (return all the vapour as liquid), you do not have to adjust the water, but running the water wide open is a huge waste of water so later on we are going to adjust the water to find the optimum water flow for your still.
6. You will now see the temperature reading on the thermometer rapidly rising and it will stop at around 77°C-78°C.

7. **IF YOU USE A COPPERHEAD BOILER or NEW TURBO 500 BOILER WITH DUAL CONTROL** you must now switch to the **LOWER** heat setting (1000W/1100W - Green light) for the rest of the still run.
8. Let the still run in full reflux for about 20-30 minutes before you open the needle valve. During this time that the still runs in full reflux it will reach equilibrium and separate the vapour in its fractions. The temperature should be **VERY STABLE** during this time and should only vary by 0.1 or 0.2 degrees up or down.
9. If the temperature doesn't remain stable in the time that the still runs in full reflux, the following things might be the cause:
  - a. Water flow through the condenser is too low.
  - b. Column too tightly packed and the reflux can't return down the column. If this is the problem the column will usually flood and boil over at the top cap.
  - c. Too much heat in the boiler. This will also cause the column to flood or let steam out the top cap ventilation hole. Reduce the heat in the boiler. It is a good thing to have a few ceramic saddles and/or marbles in your boiler. The sound of the marbles rattling in the boiler gives you an indication of how fast the boiler is going. With a new boiler it is also good to have ceramic saddles and marbles in the boiler to prevent explosive boiling.
  - d. Not enough heat in the boiler to maintain a steady flow of vapour. The temperature will also be well below 75°C.
10. After 20-30 minutes in full reflux, open the needle valve slowly until you get 3 drops per second. This will usually cause a slight rise in temperature, but it will go down and remain stable again.
11. Once the temperature is stable again, we can adjust the water flow to save some water. Slowly turn the water flow down until only the top 1½ inches (±35mm) of the Boka Head is cold to the touch. This is your optimum water flow.
12. Collect the first 100ml (sugar wash) as your heads and use it as cleaning fluid. After that you keep everything you collect.
13. Collect in 500ml cuts and TASTE and TEST the distillate. It should taste very clean and can sometimes have a slight sweet vanilla taste, but that is fine. The alc percentage should be 95 to 95.6% and nothing lower. You will sometimes see alcohol percentages around 98 to 99%, but remember to adjust for temperature as your alcohol meter was calibrated at 20°C. A rough guide is to reduce the alcohol percentage by

one point for every 3 degrees C the thermometer reads above 20°C. So, if your alcohol temperature is 29°C and your alcohol meter sits at 98% you will have to reduce that by 3% and your actual alc percentage is then 95%.

I USE THE ALCOHOL TEMPERATURE CORRECTION CALCULATOR ON THIS WEB PAGE (just under the correction chart): <https://www.copper-alembic.com/en/page/alcohol-temperature-correction-table>

14. During the time that you collect your alcohol the temperature should remain **VERY STABLE** and should not vary by more than **0.1°C** up or down.

**PLEASE** get yourself a high-quality stem thermometer so that you can measure these slight variations in temperature accurately. I recommend the JAYCAR QM7216 Thermometer . The Jaycar thermometers are not available online any more, but you can still buy them in store. The thermowell in the Boka head will take any stem thermometer smaller than 4.4mm.

15. The Boka goes into tails very fast! After collecting 2.5 litres of alcohol (from a 25 litre wash with 14% Alcohol) you have to start watching for the arrival of the Tails and start collecting in 100ml amounts. CHECK the thermometer OFTEN. When you see just a 0.1°C rise in temp, you are starting to move into the tails, but keep collecting and SMELL the distillate. When the temp is 0.2°C up, you are definitely into the tails and should start to get that “wet cardboard” taste and smell. As soon as you get that unmistakable smell and taste of the Fusel Alcohol/Fusel Oils stop collecting and DO NOT ADD that 100ml cut to your other alcohol.
16. When you are sure that you are into the tails, switch off the boiler and after a minute or two turn off the water.
17. Do NOT be tempted to collect more of the tails than just the first 50ml or so, because you are going to get all those Fusel Oils (and nasty smell) all over your packing and into your Boka head and on the condenser coil and find it VERY DIFFICULT to clean the packing, column and coil and to get rid of the smell.
18. Cleaning your still, column, packing and head after EVERY RUN is the secret of getting perfect results every time. If you do not clean your still

parts after every run, you can forget about getting clean alcohol. Take the time please, after all you want to DRINK the alcohol you produce!

If you are using STAINLESS POT SCUBBERS as packing, you can use your home DISHWASHER to quickly and easily clean your packing. Just take the packing out of the column and place them on the top shelf of the dishwasher. Add dishwashing powder/tablets as you would for a light load and run the dishwasher through it's shortest cycle. Do not put dishes in with your packing as you will catch food scraps in your packing.

You can dry the clean scrubbers in the oven. 150°C for an hour.

You can also watch these videos on the cleaning of the still and its parts:

Cleaning column and packing: <https://www.youtube.com/watch?v=35lnT5-RLYw>

Cleaning SPP: <https://www.youtube.com/watch?v=iW5gQBVsgn0&t=7s>

Thank you very much for buying one of my Boka Stills and I hope it will bring you joy for many years to come. Louwrens.