

My Experience with the "The Magical Couscousierre".

By Robin B. Kessler, CA

Come with me on a journey into Dan Riegler's world. He has designed and makes DIY kitchen pot stills, in addition to his many other talents. Dan owns Apothecary's Gardens. He travels all over the world seeking important information on Frankincense Resin, shares it in his blogs and purchases them for his store. Please visit his website at <https://apothecarysgarden.com/> to learn more about him and his company. His Blog will teach you things you never knew existed; you are in for a real treat. You can also go here to see his instructions on how to build the still <https://apothecarysgarden.com/2014/09/20/how-to-build-and-use-an-essential-oil-still/> and see a video on how it is made at <https://apothecarysgarden.com/2016/11/22/how-to-make-an-essential-oil-still-at-home-a-distillation-workshop-at-the-apothecarys-garden/>

His design and concept is the culmination of 15 years hard work and I totally admire him for the love and devotion he put into it. I would like to personally thank him for guiding and supporting me in my experience, discussed below.

I have wanted to build a still for a very long time to distill resins and plant material into hydrosols, with maybe the bonus of essential oil mixed in. I have looked at many stills but given the budget I had to work with, it seemed like a dream never to be realized. Dan explained that by making his still it would be so much less expensive. My Birthday was coming up and my husband asked me "What do you want"- I said "to make Dan's still". So I asked Dan and he said he would help me build this still so basically this was my birthday present from him also. Dan sent me detailed instructions on how to do it and what I needed to purchase. I looked up all the items and the price of everything was exactly in my budget. I could not believe I was going to get my still!

What you are about to read is my experience making this still. Dan's still was created on an electric stove. My stove is gas and we had to make a few modifications in his design to accommodate the difference in the heat source, which seems to be much hotter, even on low settings. Electric stoves seem to heat differently than Gas stoves.

I want to thank Dan for all his work, I appreciate his allowing me to share my experience and his design with the world.

I also want to thank my husband, Dennis for helping me put this whole thing together.

This pdf will show you how to actually create his still with simple step by step instructions, including pictures. Everything you will see below was purchased either at Amazon.com or from Home Depot.

1 What you need to purchase:

- 1 Cuisinox 15 liter. Couscous Pot (I got mine on Amazon)



- 1 Glass Allihn Condenser With 24/40 Joints 400mm long with Glass Hose Connections (I bought this on Amazon)



- 1 Glass Conical Separator Funnel, 1000ml Capacity (Amazon)



- 1 Educational 7-G87-A Stamped Steel Support Ring Stand with 2 Rings, 6" Length x 4" Width Base Size to hold the separator. (Amazon)



- 1 320 GPH Statuary Fountain Pump for Water Features or aquarium. It has to have the ability to pump the water up to the Condenser and circulate it (this was purchased at Home Depot).



- 1 GLASS FUNNEL Neutral glass 100 mm 100 mm stem to put inside the Jar - you can get any size depending on what size jar you are using (Amazon)



- **1 Gallon Glass Jar Wide Mouth with Airtight Metal Lid - USDA Approved BPA-Free Dishwasher Safe Mason Jar for Fermenting, Kombucha, Kefir, Storing and Canning Uses, Clear (on Amazon) to collect the hydrosol. This was way cheaper than getting a beacon.**



- **2 Ball 64 ounce Jar, Wide Mouth, (I purchased 2 to have them and it was less expensive this way) (on Amazon)**



- 2 rolls Gas fitting Teflon Tape- this is thicker than regular Teflon tape and it is yellow. I bought 2 as it is used in several steps and should be changed with each use. (Home Depot)



- **Boswellia carterii** - We used 16 ounces for our test run (I will explain below how we put it into the pot and how much water you will need).

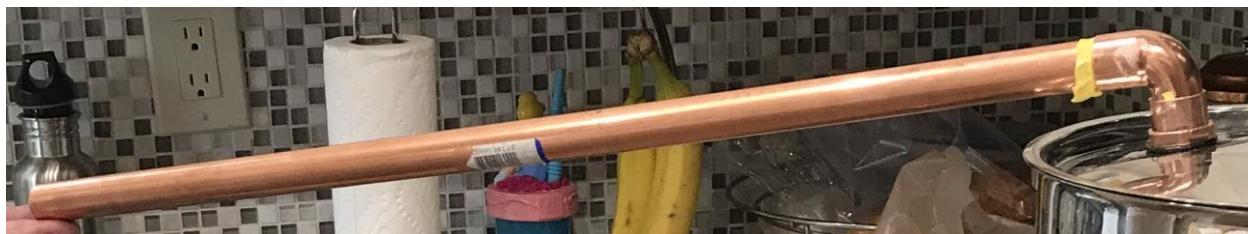


- Bucket, big enough to hold the pump and water as you see in this picture.



- Plastic PVC Tubing 3/8 inch (interior Diameter) which is needed to run from the pump to and through the condenser and them back to the water source. (as you see in the picture above). We bought 20 feet but depending on where you put the water source vs the condenser will determine the length you need. (20 feet was much longer than we needed but we left the excess so we could move to another location, if I so choose).
- ¾ inch diameter Copper Pipe approx. 2 ft.
- 1 Copper elbow ¾ inch, 90 degree angle.
- 1 Copper adapter (for the outside of the lid) female to receive the copper pipe and has a ¾ inch thread on the other side to go through the Lid of the Pot.
- 1 Copper Female fitting to receive the threaded portion of the above adapter once put through the Lid of the Pot

- 2 rubber washers to fit the threaded portion of the Adapter, above, one will be placed on the outside of the Pot and the other on the inside. (We used O-Ring Washers for this purpose)



- 3 small ring type hose clamps to secure the hose on the condenser nipples (2) and the Pump (1).
- 4 or 5 medium binder clips to hold the top of the pot down to prevent steam coming out. Dan recommended electrical tape but in our effort it melted as the pot got hot, we tried little clips over the Tape but they popped when the Tape melted. The Medium Clips held the lid and the Pot and completed the seal.



- You will need ice to keep the water in the bucket cool all the time so make sure you have a lot. Purchase several bags so you can put into a cooler, or if you are doing this in the sink like I did you can use the faucet to constantly run water into the bucket. I did this on and off- I put in ice then checked it every 20 minutes- if still cold I waited till it got warm and added more ice. Towards the middle I ran out of ice so I ran the cold water on very low.

**** Make sure you purchase everything before starting. Read through this PDF first before you go out and purchase anything. We had to improvise on several steps like the Binder Clips. Reading through the PDF and testing your purchases before starting (or better leaving the store) could save you a great deal of time and stress. Assembly, if you follow the instructions exactly should not take very long. If you do not have the right equipment or run into problems it could take several hours. We did a test run with 5 liters of water in the pot to make sure we had no leaks, had good flow from the pump for cooling and good flow through the condenser. We ran this test for 2 hours the day before.**

Our Adventure into “Building a Still”

Check the following before you start assembly:

- Check your purchased items, as they arrive, many of the items are glass and you want to be sure they are not broken in shipping.
- Also when you purchase the pump, submerge it in water and turn it on to make sure it works.
- Make sure you have everything set up in one room so it is easy to take each piece out as you go.
- Measure out the PVC Tubing to make sure you have enough to go from each end of the condenser to the bucket where the water and pump will be then cut it so you have two pieces. Leave yourself some extra on both sides. You can always cut it later.

Assembly:

Prepare the Lid: (our most challenging step)

You purchased a connector that has a $\frac{3}{4}$ " thread. You will need a $\frac{7}{8}$ inch hole in the cover of the pot, or a hole large enough to accommodate your fitting.

The recommended method is to use a $\frac{1}{2}$ " electric drill to put a hole in the lid then use an auger bit to enlarge the hole to the size required to accommodate your fitting. If you choose this method be careful to “Tap” the spot first as it is Stainless steel and you want to avoid your drill “traveling” and damaging the Lid. Additionally, you may get flying chips so be sure to wear safety goggles and other protective gear.

In sourcing our materials we found the required “Auger Bit” to enlarge the hole from $\frac{1}{2}$ " to your fitting size was over \$50.00 and we had no further use for this Drill Bit.

{CHALLENGE 1} We checked our supplies and found a $\frac{3}{4}$ " bit (new in Home Depot this is approximately \$20). We choose to drill a $\frac{3}{4}$ " hole. As the threads are on a 3/4 connector it would not go through the lid. Using a reaming motion when drilling the hole along with several files and a sanding stone (on electric drill) we were able generate a hole that fit the Connector.

When we purchased the Female ¾" fitting to lock the ¾" connector into the Lid we assumed that it would "Lock". {MISTAKE 1} Never assume anything check it out before you start. The Plumbing experts at both Home Depot and later at a local Hardware and plumbing supply establishment, we were told that these fitting are not made to thread into each other all the way as generally they go onto pipes or other fittings.

This generated {CHALLENGE 2} we sort out any plumbing or hardware solution that would lock the connector into the Lid. We finally found a solution that worked for us. We found a Metal washer (See photo below) that when placed over the connector allowed the Female fitting we originally bought lock the connector to the Lid. {SUGGESTION} Take the Lid with you to ensure your Gerry-rig works before leaving the store.

So we:

- 1. Put one of the washers (O-ring) over the threads of the Connector.**
- 2. Put the threaded end of the Connector through the Lid**
- 3. Put a second Washer (O-Ring) over the threads of the connector (on the inside of the Lid)**
- 4. Place the Metal washer over the threads of the Connector**
- 5. Apply Teflon tape to the threads of the Connector (If you do not have normal Plumber's Tape (Thinner) you can use the Yellow Tape you purchased, one and a half times around**
- 6. Affix the Female fitting to the Connector and tighten with offsetting wrenches (Channel Locks or regular wrenches are fine).**
- 7. YOU HAVE COMPLETED WHAT WE FOUND TO BE THE HARDEST PART – CONGRATS!**

Top of Pot showing connector and exterior O Ring washer:



Inside of Pot Lid – You cannot see the washer under the Metal washer locked in place with the Female fitting:



Continued Assembly:

Insert the 90" Elbow into the Connector. If you can use Teflon Tape on the Elbow that would be good but it worked for us without.

Wrap Teflon tape and tape the end that will go into the elbow, wrap it around the pipe (end that will go into Elbow and insert the pipe into the elbow, as you see in this picture). Make sure it is a tight fit.



Lay out the condenser on a clean surface and connect the PVC hoses to it. The one that will be connected to the pump is the one that is near where the hydrosol will drop out. The other one is the “return” where water will come out of. Clamp the hoses with the round clamp connector as you see in this picture.



Wrap the bottom of the double boiler with the Yellow Teflon Tape around the rim, wrap it 2 times, we tried it once but it was not enough to hold the two parts in place. Set it aside.



Now you are ready to put the water and resin into the bottom pot. The resins are done as a hydro distillation meaning the resin is sitting in the water. Put water and resin into the pot {"Still"} at a ratio of 1:5 (1 being the resin- 5 the water) So 1 Kg of resin to 5 liters of water. Given that the pot is 10 liters to the top part we put in 3 liters of water to 16 ounces of resin. If you had 32 ounces of resin you could do the 5 liters of water. You need to leave room just in case there is frothing, recommended 1/3 of the volume of the Pot. Give it a mix with a long spoon just to move it around a bit. FYI- When this was all done we realized we could have added another $\frac{1}{2}$ liter of water. The next time we do resins we will do this.



Assemble the whole Pot but DO NOT turn the heat on.

Put the clips on to hold the top in place. It should look like this below.
When we did our trial run and used the electric tape, we only put it on for about 2 hours just to check for leaks. The tape started to melt so we put small clips on. This held it together. When we did the real thing, after two hours the tape melted and popped off the small clips, you can actually see it in the picture below. Steam started to come out so my husband put on Medium binding clips all around the top and that held it place better. No steam escaped this way. Again we have gas heat, which heats up around and up the pot, the electric tape might work for you if you have an electric stove.

The Lid with the Copper Pipe will be heavy and could tip your pot (Top from Bottom). You will need to have some system to hold this and in due course the condenser up and in place. IT WILL BE TOO HOT TO HOLD!! See below.



Put the bucket where you are going to use it and fill with cold water. Ensure that the PVC hoses are clear. One hose runs from the Pump to the Condenser and the second PVC hose from the Condenser to the bucket in which you have placed the Pump.

Put the 1 gallon jar that you are going to collect the hydrosol in and place it as you see below. Add the funnel to the jar. Note it has to be high enough so it drips into the funnel. If it drips lower, vapor will escape and you will lose some of the good stuff.

Now wrap the loose end of the Copper Pipe with Teflon Tape.

You will need 2 people to do this. One needs to hold the condenser while the other needs to put the hoses in the bucket. Now insert the copper pipe (wrapped with Tape) into the condenser.

You will need something to hold this up so the condenser and the piping do not move. As you can see in the picture below we used thin plastic wiring and played with it till we got it to not move and used our kitchen cabinets knob to hold it up.

Once everything is set you can turn on the fire.

Start it on medium, not high to get it to boil. Once it starts boiling you will see small drops come out the end of the Condenser. Turn the heat down to low/medium. You might notice bursts of drops coming into the condenser and then out into your collecting jar. If this happens to many times lower the heat a bit more. An occasional burst is ok.

You need to keep the bucket cool so the condenser stays cool and the vapors from the pot can be liquefied and flow into your collector jar. You will have to check the bucket every few minutes to make sure it is staying cool. As said before I added ice every 30 minutes then about 3 hours in I ran out and put the faucet on and ran it in the bucket on slow cold water.



Dan told me it would take approximately 8 hours for it to complete. I stopped it at 8 hrs. for fear the pot would burn since I could not look inside it. I got 1.2 liters of hydrosol, mainly because it was late around 10:00 pm and we still had to separate the essential oil from the hydrosol. Had we started earlier in the morning we would have let it go longer given when we opened the pot, we actually had about one and a half liter left. This was my first time so I did not want to push my luck.

BE VERY CAREFUL THE COPPER PIPE IS EXTREMELY HOT. SO PLEASE DO NOT TOUCH IT. This is basically a stove top still but if you do this outside you can use a garden hose and put it in a bigger bucket to cool off the condenser. For outside you will need a portable electric or gas burner.

Allow the pot to cool a bit and mostly the copper piping. You can remove the jar and close it until you can separate the essential oil from it.

Cleaning the Pot:

Working with resins clean up can be a bit difficult. What is left is the oleoresin and it can be real sticky. Scoop out whatever you can and put it into a glass jar. You can use it another time to make a salve with it. DO NOT POUR THE REST DOWN THE SINK OR YOU WILL BE CALLING THE PLUMBER IN THE MORNING. Once cold, the resin will get hard again, and can really mess up your pipes. Take a large garbage bag and pour it all in there. Once you get out what you can, put it in the sink and run very hot water and dish detergent so that the left over resin re melts. Then you can get the pot clean. If you do not do this immediately, you can try using cooking oil to get some of it up, then follow my other suggestions. If you leave it sit with nothing in it- say- goodbye to the pot.

Now you can separate the essential oil from the Hydrosol.

You will be amazed how much essential oil you get out of this.

Assemble base of the separator and put it into the holes. Place a clean sterile glass jar under it. (I put all the jars into the dishwasher and ran it prior to using them) Make sure the knob on the separator is in the off position. Horizontal is closed- Vertical Open

Slowly pour the hydrosol into the separator, if you can get it all in that's ok, if not put it in as much as you can. Slowly open the knob and allow the hydrosol to go into the jar, close the knob as soon as you see the essential oil come close to the valve. Remove the jar so none of the essential oil gets into the hydrosol. Close the jar. Put another small sterile jar under the separator remove the last bit of Hydrosol until the Oil runs into the valve. Put another small sterile jar under the separator slowly take out the essential oil. We got 14 mls of essential oil. Every set of resins are different so you might get the same or less essential oil.

Pour the essential oil into a clean dark glass amber bottle. The hydrosol can stay in the jar or it can go into other clean glass bottles as long as they have been sterilized. The hydrosol must be refrigerated because it has no preservative in it. It should last up to 2 years as long as no contamination gets in it



Essential Oil

15 ml

Amber Glass Bottle

This shows how much essential oil we got and the arrow shows how filled it is.



Empty the condenser and run some cool water through it, empty the tubing and allow it all to dry before putting it away. The same goes with everything else.

This is basically it. I hope you enjoyed this wonderful magical journey into making this still

If you have any further questions you can email me at
info@rbkaromatherapy.com or find me on Facebook. You can also go to my website and see a video on how I did it at
<http://www.rbkaromatherapy.com/all-about-frankincense-resins.html>