

# The *essencia* Express Water Purification Condenser



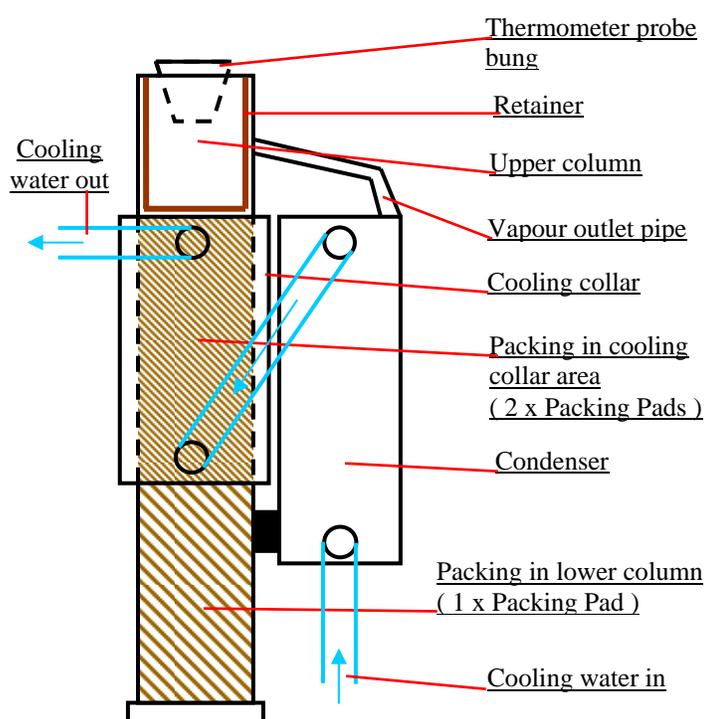
## Instructions

### Assembly:

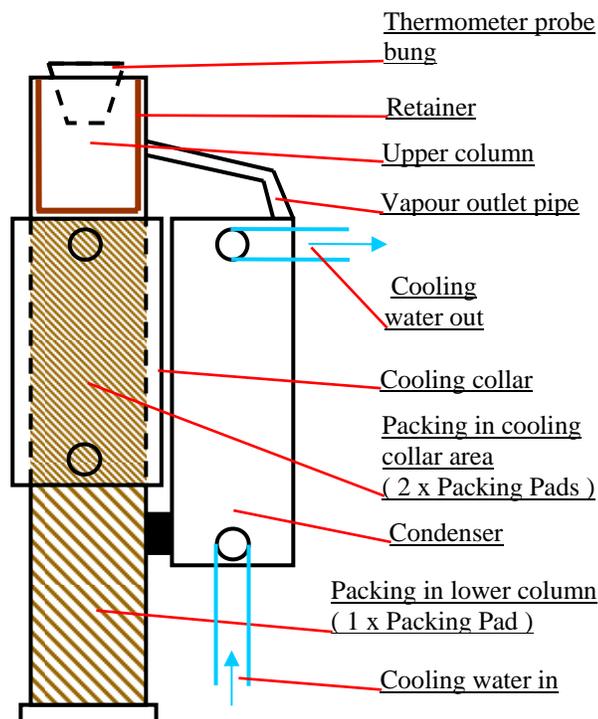
1. Fit the reflux column/condenser to the domed lid ensuring the fibre washer sits between the column and the outside surface of the lid. Tighten until a good seal is achieved. (Note: Do not hold onto the condenser when tightening, hold onto the reflux column only).



2. Fit the thermometer probe fully into the rubber bung.
3. Locate your boiler on a firm, heat resistant base ensuring the water hoses reach a cold water supply and drain.



**Reflux configuration**



**Condenser only configuration**

The *essencia* Express purification condenser comes assembled in the **reflux configuration**. While this configuration provides the maximum purification performance, it needs the flow rate of the cooling water to be maintained at the right level. In the **condenser only configuration** a high level of purification is achieved and the purifier is less sensitive to the cooling water flow rate (as long as the flow rate is above 450ml/min). To change from the **reflux configuration** to the **condenser only configuration**, simply remove the link hose from the top of the condenser and transfer the 'cooling water out' hose to the top of the condenser as shown in the above diagrams.

### **Purification:**

1. Pour water into the boiler being careful not to overfill it (leave at least 5cm at the top of the boiler).
2. Place the opened clamping ring onto the boiler so it rests at the base.
3. Fit the lid and condenser unit. Fit the clamping ring. Fit the bung (with the thermometer probe in place) firmly into the top of the reflux column.



4. Plug in the element ensuring the plug is pushed fully and firmly into the element base.
5. Start running the cooling water at around 450ml/min. (this will vary slightly depending on the cooling water temperature).
6. Pure distilled water will start to flow once the head temperature reaches approx. 98 °C. If the temperature will not reach 98 °C, reduce the cooling water flow in small increments until the distillate starts to flow. The purified water should flow at a rate of approx. 2 ½ litres per hour.
7. Be very careful not to allow the boiler to run out of water. In a 5 litre boiler it is recommended that you start with 4 ½ litres of water in the boiler, draw off 3 litres of distilled water then **turn off the boiler**. Remove bung and thermometer, put a large funnel into the top of the condenser and pour in 3 litres of water. Turn the power back on to continue collecting.

### **Notes on cooling water flow.**

Cold water temperatures vary greatly between winter and summer and in different locations. While the **essencia** Express system is relatively tolerant of these changes in temperature you may find you have to adjust the average flow of the cooling water to maintain optimum performance.

### **Cleaning**

You will find after several uses a residue will build up on the packing inside the reflux column.

#### **To clean the reflux column and condenser:**

1. Fit the bung (with the thermometer probe in place) firmly into the top of the reflux column.
2. Place the condenser/reflux column (still attached to the lid) upside down into the top of the empty boiler or a large bucket. Leave the tubing and thermometer outside the boiler.
3. Dissolve one teaspoon of citric acid in 600ml of hot water. Pour this into the up-turned base of the reflux column until full. Make sure the end of the distillate collection tube is outside the boiler and higher than the edge of the up-turned lid.
4. Leave soaking for around 20 minutes. The digital thermometer will show the temperature of the fluid inside the reflux column. Do not proceed further until the temperature has dropped below 40 °C.
5. Lift the lid from the boiler just enough to allow you to reach the thermometer probe and bung. Remove the bung and allow the citric acid solution to drain into the boiler. Transfer the lid, reflux column, condenser and tubing to a laundry tub or similar.
6. Keeping the lid and condenser inverted, flush the reflux column and packing well with cold water. To flush the condenser, stick the end of the distillate collection tube up the tap. Water will flow through the condenser and out the bung hole in the top of the column.
7. Empty the citric acid solution from the boiler and rinse out the boiler.



Place into boiler



Pour into up-turned base



Remove bung and drain



Flush column and packing



Flush condenser via tube

**Note.** The packing will need to be replaced periodically as it does wear out and become less efficient. New packing is available from your specialist store.

### **Replacing the column packing.**

- Remove the column from the lid.
- Remove the three packing pads through the bottom of the column. Use a large screwdriver etc through the bung hole to push the top two packing pads down.
- Holding the column upside down, make sure the retainer is in place at the top of the column. Fit the first packing pad through the bottom of the column. Using the handle of a large screwdriver or similar, push the pad down the column and compact it against the retainer.
- Fit the second pad, compacting it so that it is level with the bottom edge of the cooling collar.
- Fit the third pad into the lower column but do not compact this pad.
- Check that the packing at the top of the column is level with the top edge of the cooling collar. Pack this down using a blunt instrument if necessary.

### **Troubleshooting**

- \* Distilled water flow is slow or temperature will not rise to 98 deg.C
  - Check for vapour leaks around clamping ring, base of reflux column or thermometer probe bung. If a leak is found, turn off the boiler, check for obstructions in seal areas, ensure seals are tight, turn on the boiler again and recheck for leaks once the purifier has come up to temperature. If leaks are still present contact your retailer.
  - Check the cooling water flow rate is down around 450 ml/min.

### **Safety Note**

When using or troubleshooting the purifier, the metal body becomes very hot. Do not allow skin to come in contact with it. Be especially careful if you are disassembling the purifier, for any reason, that the metal parts and the liquid inside are allowed to cool to a safe temperature before handling.

Outside New Zealand it may be illegal to own or operate a distillation system. Please check with your local authorities.

If you have any queries regarding your **essencia** Express Condenser, you can contact us via your retailer or by emailing us at [support@essencia.com.au](mailto:support@essencia.com.au)

For more information about the full range of **essencia** products and to keep up to date with the latest developments visit our website at [www.essencia.co.nz](http://www.essencia.co.nz)