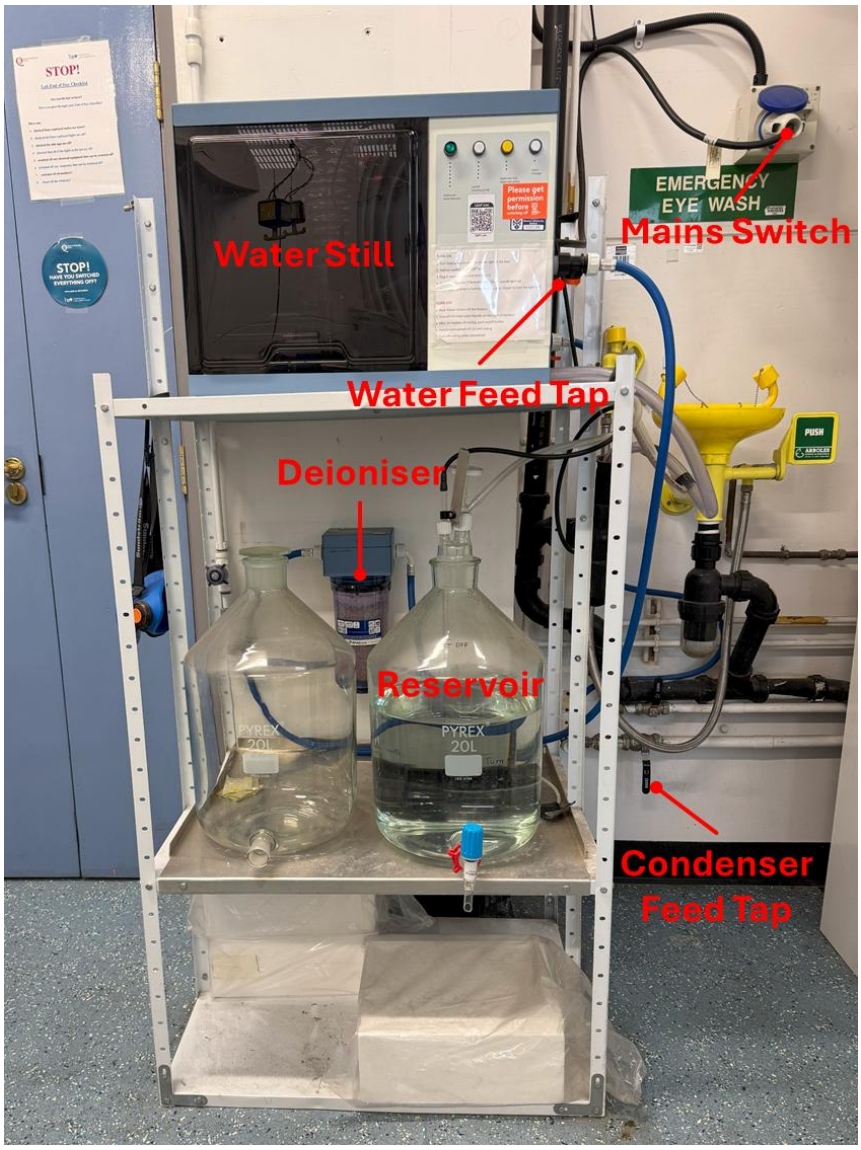
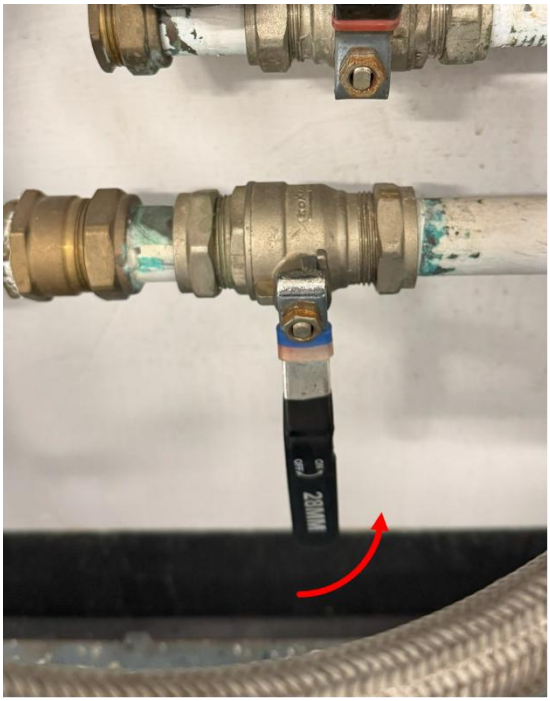
NOTE: Before reading this you MUST read the 'SOP - Energy and environmental impacts under normal, abnormal and emergency conditions' which is Mills group web site, https://www.profandrewmills.com/leaf-documents/. This addresses general energy and environmental impacts under normal, abnormal and emergency conditions considerations which you NEED to be cognisant of before conducting any experiment. If you identify anything in an SOP which can be improved, please contact the LO and PI to discuss the proposed change(s) before putting them into effect.

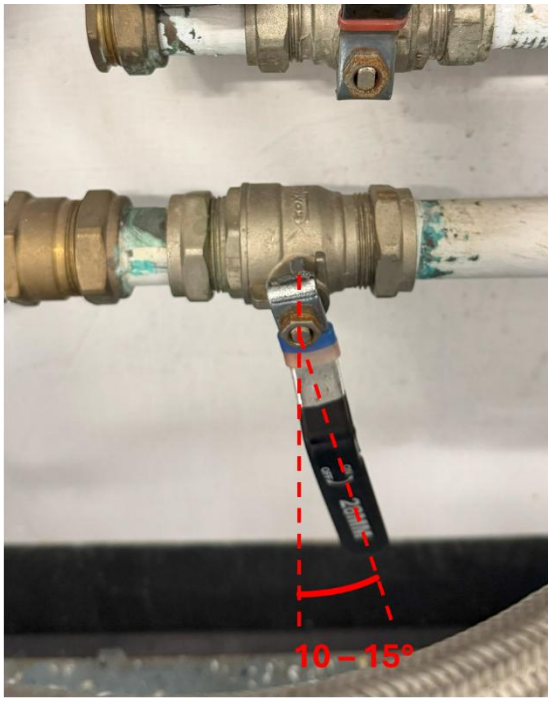
Water Still (Aquatron A4000D) – Standard Operating Procedure (01.139)



1. Turn on the water feed tap on the side of the water still by turning clockwise.

2. Turn on the condenser water feed tap located under the eye wash station to the right of the water still. The tap only needs to be turned 10 – 15° anticlockwise.



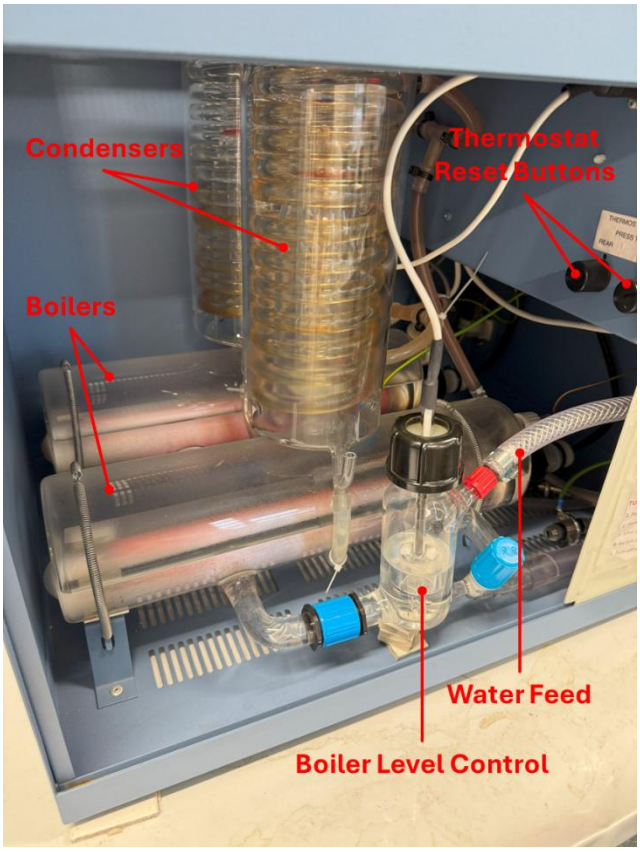


3. Turn on the mains power, located above the Emergency Eye Wash sign, by rotating it clockwise. It will click in place.

4. Push the ‘On/Off’ button. This button and the ‘Clean’ button should light up. This allows the condenser water to flow through the system without switching on any heating elements.

5. You should be able to hear the water flowing. If unsure if there is a sufficient flow rate, the smallest tube can be carefully pulled up from the drain. You will then be able to see the flow of water which should be laminar. Securely push the tube back in the drain.

6. Push the ‘Clean’ button to activate the heating elements and start the distillation. You should see the heating elements in the boilers starting to glow orange within 1 – 2 min. If they don’t, report it to the PI or PDRA. The thermostat buttons may need to be reset.



7. The deionized, doubly distilled water should start dripping into the reservoir at a rate of 4 L/h.

8. There is a water level sensor installed at the top of the 20 L reservoir. This will switch the heating elements off when the reservoir reaches 20 L. The yellow 'Reservoir Full' light on the still will illuminate.

   NOTE: The water still should **NEVER** be switched on near the end of the day to run overnight, despite having the sensor to stop the distillation. The sensor can sometimes fail, causing the reservoir to overflow.

9. To shut down the water still, push the 'Clean' button to turn off the heaters.

10. Close the water feed tap at the side of the water still by tuning anticlockwise.

11. Allow the still to cool down for ca. 10 – 15 min before turning off the condenser water feed tap.

12. Push the 'On/Off' button to switch off the water still and then turn off the mains switch by rotating it anticlockwise.

    For further information the instruction manual can be found online at https://keison.co.uk/products/stuart/Aquatron_ENG_Manual.pdf.