Basic Operation:

1. You should find the tank filled to the ‘operation level’ line with clean DI water, lid on, heater off, ultrasonic off. Check to make sure this is the case, and if yes, proceed to step 2. If not, skip to step 17.

2. Turn on the drying oven (the one on the right). It is set for a constant 80 C.

4. Turn on the ultrasonic tank heater by pushing the toggle switch to the ON position.

5. Turn the ultrasonic function on by rotating the mechanical timer dial clockwise to 20 minutes.

6. At the end of 20 minutes, the bath will be heated to about 60 C, and the water will be degassed.

7. Remove the lid and place your samples into the bath using the appropriate hanger. It is important that NO objects come in contact with the bottom of the bath. The ultrasonic transducers are located there and increasing the mass of the bottom of the tank will cause them to be damaged.

8. Make sure that the fluid level is at or above the ‘operation level’ line with your parts inserted. If not, add some additional DI water until this is true.

9. Replace the lid. (not doing so will cause the water bath temperature to drop to about 50 C)

10. Set the mechanical timer to 20 minutes.

11. At the end of 20 minutes, the ultrasonic system will shut off.

12. Shut off the ultrasonic tank heater.

13. Remove your parts and go through a rinsing/drying cycle. (replace the lid)

   a. Set your parts on the rack inside the sink and rinse well with DI water.

   b. Set your parts inside the solvent catch basin on the elevated rack.

   c. Use the IPA squeeze bottle to rinse both sides of your substrates until all water has been displaced.

   d. Set your parts in the drying oven on a cookie tray, and leave there for 15-20 minutes to dry away the excess IPA.

14. Clean up the area around the ultrasonic cleaner to leave the table dry as DI water if left to stand on this grade of stainless steel will cause surface discoloration of the table top which can lead to corrosion.
15. While your parts are in the drying oven, pour the used IPA from the catch basin into the ‘waste IPA’ container. You may also begin to set up any work stations for the next processing steps you will take (photoresist spinner, polyimide spinner).

16. When your parts are dry, remove them from the drying oven. Turn the oven off if you will not need it again. Leave it on if you will need it again soon.

17. If you discover the Branson ultrasonic cleaner empty, fill it with 9 L of DI water, three caps of neutral liquid detergent and then return to step 2. Otherwise, skip to step 18.

18. If you discover the water in the tank to be very dirty, it will be necessary to drain, rinse and restock the ultrasonic tank before use.

19. The drain is located on the left side of the unit toward the rear.

20. Make sure that a drain hose and waste water jug are attached and then open the drain valve.

21. Drain as much water as the waste water jug can hold, close the valve, discard the water down the wet bench sink, and repeat until the tank is empty. For a full bath, and the use of a one gallon waste water jug, you will need to do this three times. After the tank is fully drained, rinse the tank with a little additional DI water.

22. **Close the drain valve**, and then poor in 9 L of DI water to fill the tank.

23. Add 3 caps of neutral liquid cleaning detergent.

24. Then return to step 2.

If there are any problems or questions, please contact the primary equipment manager for this unit, Bentley Wall  330-221-7048 cell