

Tube Furnace Wafer Bonding (Thermco) Operating Instructions

Do not open the inner glovebox antechamber door without running the “AutoVac” sequence (at least two pump purges) of the antechamber first.

Do not run any hazardous material in the Thermco furnace without prior staff approval.

Do not run the Thermco furnace at over 500c without prior staff approval.

1. On the monitor display verify the “Blower Speed” is set to 50%.
2. On the monitor display verify the “O2 level” is below 1ppm.
3. On the monitor display verify the “Trace Moisture Dew Point” is below 1ppm.
4. On the monitor display verify the “Lab Pressure” is set between 1.5 & 3.5 and the Glovebox is properly maintaining pressure.
5. Verify that the inner antechamber door is properly closed.
6. Open the outer antechamber door and place your sample inside the chamber and then close the door. (ensure that what you are placing in the antechamber will not be damaged by exposure to vacuum)
7. To gain access to the Glovebox menu, press the “FCT” button on the Glovebox controller.
8. Use the arrow buttons on the Glovebox controller to toggle down on the menu to the “AutoVac Option Menu”, and then press the “FCT” button.
9. Press the “FCT” button again to start the AutoVac sequence. This should be 2 cycles of 3 minutes pump downs.
10. Using the glove ports, open the inner antechamber door, recover your sample, and then close the inner antechamber door.
11. Using the glove ports, open the inner chamber door to the Thermco Furnace.
12. Slide out the quartz tray and place your sample so that when the quartz tray is placed back in the furnace, your sample is in the middle of the furnace tube.
13. Close the Glovebox port to the Thermco Furnace.
14. Adjust the dial on the Thermco Furnace for desired temperature. Typically, this involves subtracting 200C from the desired temperature to obtain the appropriate dial setting (Example: $450 - 200 = 250$, to achieve a temperature of 450C the dial should be set to “250”)
15. Turn on the breaker to power on the Thermco Furnace.
16. After your sample has finished processing, wait till the Thermco Furnace is at 50 degrees Celsius before opening the inner Glovebox port and recovering your sample.
17. Recover your sample and ensure the inner Glovebox port to the Thermco Furnace is properly sealed.
18. Ensure that the antechamber has been properly pumped and purge prior to opening the inner chamber door for the antechamber.
19. Place your sample in the antechamber and close the inner antechamber door.
20. Recover your sample for the antechamber.
21. Fill out the logbook.