

Thermal evaporator

Operation manual



1. Set up.

1. Check on main screen (fig.1) that the Cryo pump is ON (green color). The working temperature of the Cryo has to be about 11-13K.
2. Check on main screen that the water flow is on (all the water lines and spinning circles on water panel are blue color).

2. Wafer/ material loading.

1. Switch to AUTO mode.
2. Release two door hooks and press VENT button.
3. After pressure reaches the atmosphere pressure, open the chamber door.
4. Release the four screws holding the wafer holder (table) and pull it out of the chamber (fig.2).
5. Place the wafer on the holder and attach it with the Kapton tape (fig.3).
6. Put a table inside, having laid rubber gasket, and tighten the screws.
7. Put two pellets of titanium to tungsten boat (fig.4).
8. Make sure that there is enough gold in the crucible.
9. Close the chamber door.

3. Set to vacuum.

1. In AUTO mode press VACUUM button.
2. Wait when pressure is below 2×10^{-6} mbar.
3. Switch to MANUAL mode
4. Set the chiller at 21C (fig. 5).

4. Evaporation

Ti evaporation

1. On Maxtek main menu, go to "View/ Edit Process", select Ti -300 program and press START button (fig. 6.)
2. Make sure the Ti -300 program selected and press START button again.
3. Press ABORT button and then press RESET button.
4. Press Maxtek MANUAL button to ON.
5. Select Source 1 on main screen and switch it ON.
6. Slowly increase the power to 25% using remote control.
7. Wait for about 5 minutes.
8. Slowly increase the power to 40 %. (current is 200-210 Ampere)

Attention. Don't increase the current more 220 Ampere

10. When the pellets blow up and rate reaches of 5-10 A/s, press ZERO button and OPEN the shutter.
11. CLOSE the shutter once has reached the desired thickness.
12. Slowly decrease the power back to 0%.
13. Press ABORT button and press RESET button
14. Press Maxtek MANUAL button to OFF.
15. Select Source 1 on main screen and switch it OFF.

Gold evaporation

1. On Maxtek main menu go to "View/ Edit Process", select Au -1000 program and press START button.
2. Make sure the Au-1000 program selected and press START button again.
3. Press ABORT button and then press RESET button.
4. Select Source 2 on main screen and switch it ON.
5. Press Maxtek MANUAL button to ON.
6. Slowly increase the power to 25% using remote control.
7. Wait for about 10 minutes.
8. Slowly increase the power to 38-40 %. (current is 21-23 Ampere)

Attention. Don't increase the current more 25 Ampere

9. When the rate will reach 4-5 A/s press ZERO button and OPEN the shutter.
10. CLOSE the shutter once have reached the desired thickness .
11. Slowly decrease the power back to 0%.
12. Press ABORT button and press RESET button.
13. Press Maxtek MANUAL button to OFF.
14. Select Source 2 on main screen and switch it OFF.

5. Unloading

1. Wait for about 30 min.
2. Switch the chiller OFF.
3. Switch to AUTO mode.
4. Release the chamber door hooks and press VENT button.
5. Open the door and unload wafer holder.
6. Release the wafer and return the wafer holder to its place in the chamber.
7. Close the door and press VACUUM button .

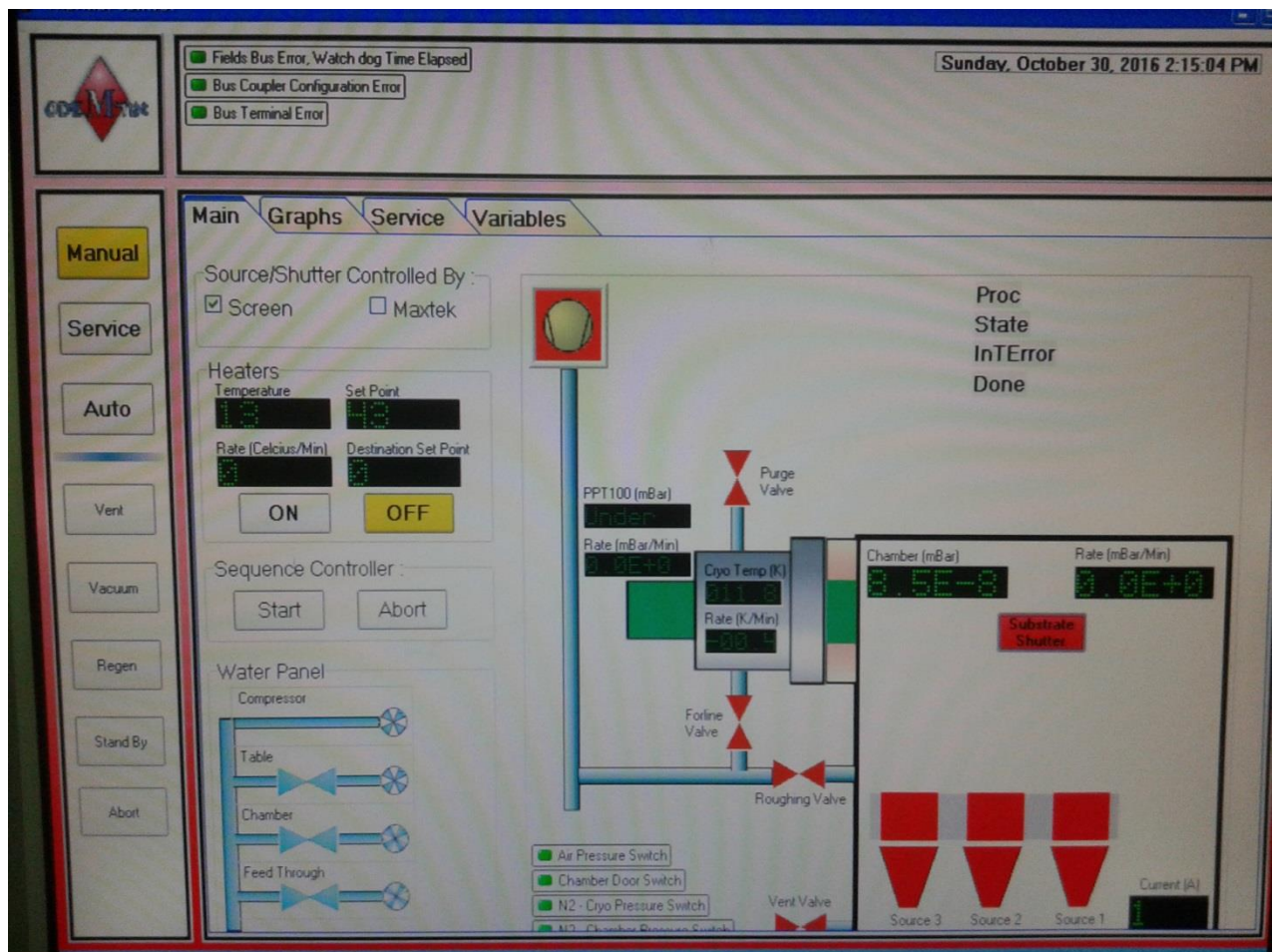


Fig1. Main screen



Fig.2. Release the screws holding the wafer holder (table).

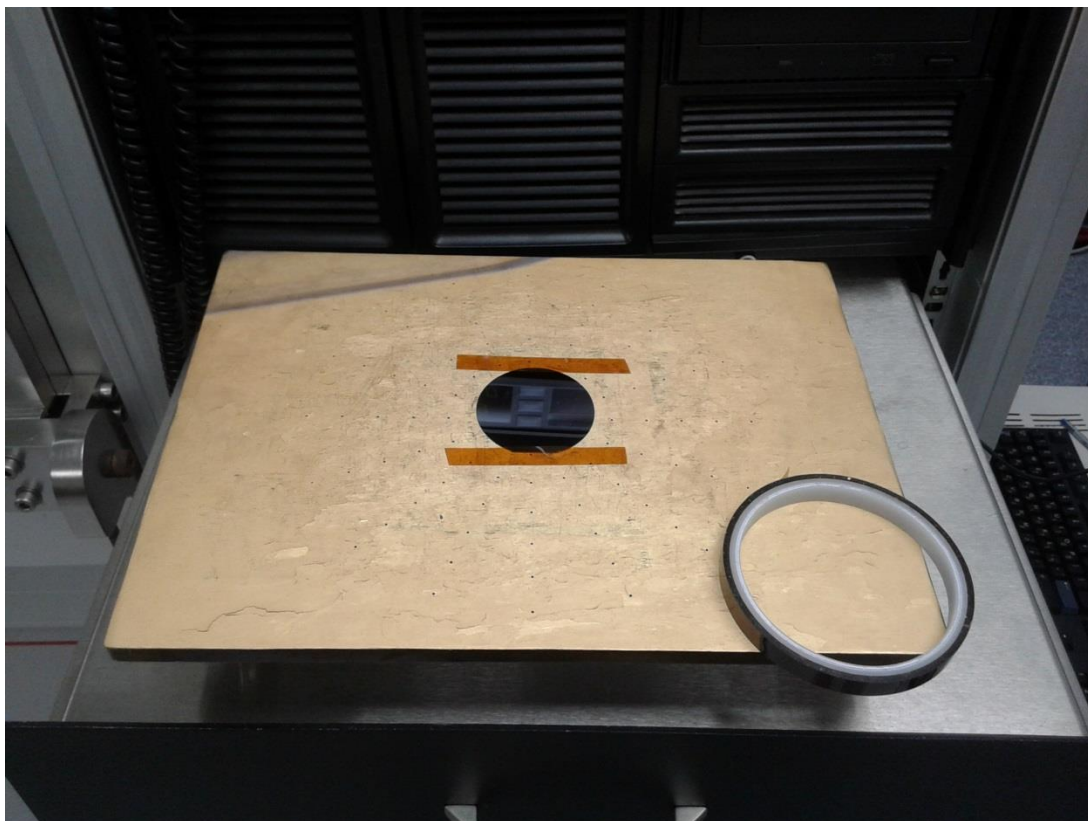


Fig.3. Place the wafer on the holder (table) and attach it with the Kapton tape.



Fig.4. Evaporation materials liners.



Fig.5. Chiller.



Fig.6. Main screen and Maxtek controller.