# VST work protocol

1. All users must work with tool BOOKIT.

2. Maximum wafer size- 4 inch.

3. Taping the sample-only with Kapton tape.

4. Users are not allowed to replace or fill the center crucibles .

5. Students are not allowed to open the main vacuum door in VST system except specific students. Student that allowed to open the chamber have to let us know any time they open the chamber.

6. If you are allowed to open the main chamber, wait at least 15 minutes before opening the chamber.

7. When unloading your sample, stay in "vacuum" mode at the load lock chamber, until your process is done, and then do vent- do not use "standby" mode.

8. Use your own program. Your program have to be with your name on it.

9. Always start from the minimum possible power of the material, and if it is not enough change the current position, frequency or amplitude. If it is still not working, stop the process, increase the power, and start again.

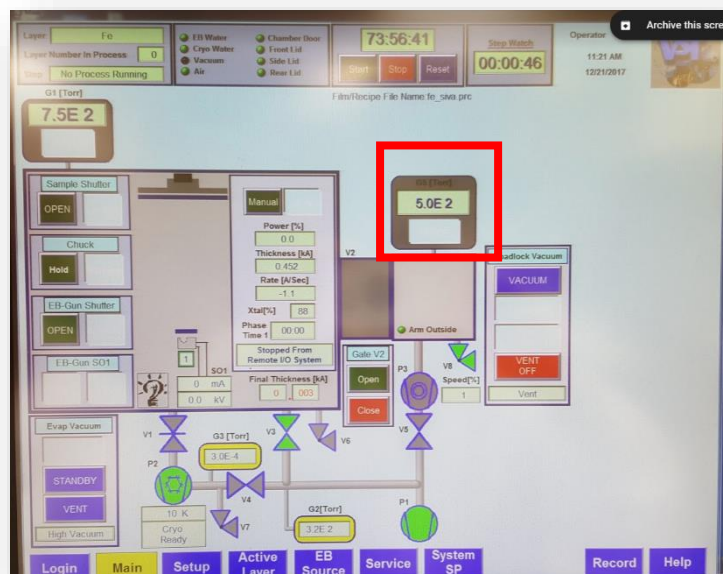10. Crucibles 5 and 6 are Mark.S. only! Users are not allowed to touch or use this crucibles.

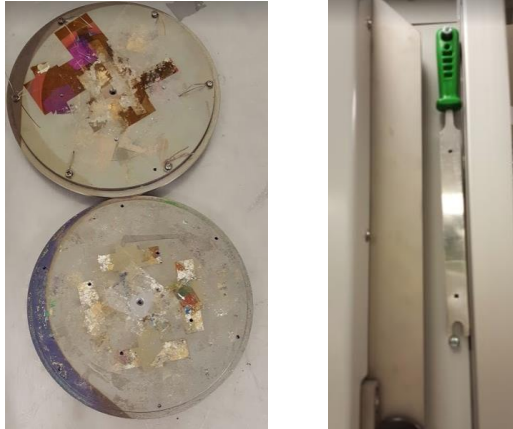# VST Manual

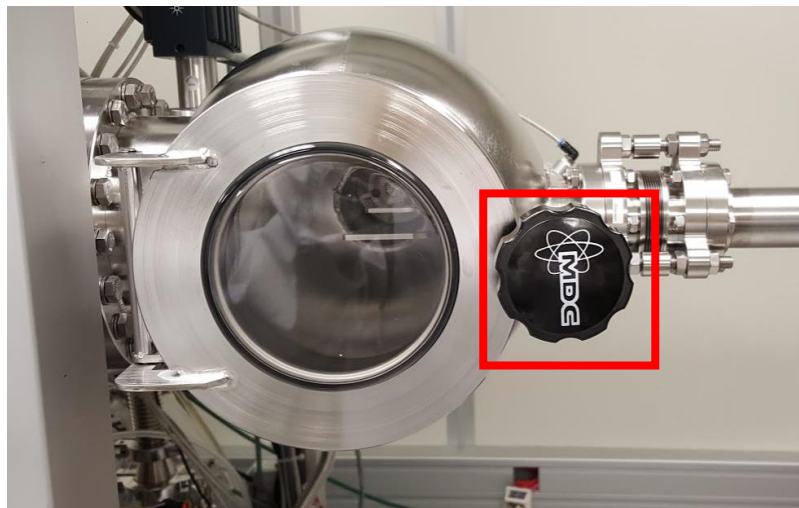## Loading the sample- Load lock

1. Work in "Main" window.
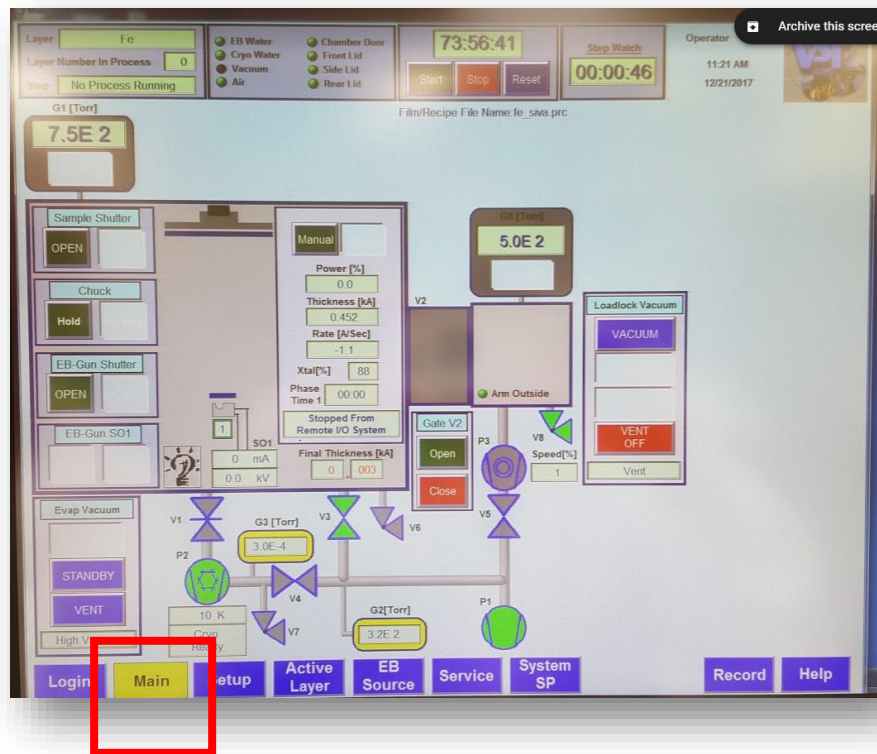
2. Check if the load lock chamber is at atmospheric pressure

    (≈6x10^2Torr). If not, press on Load lock Vent bottom and open the
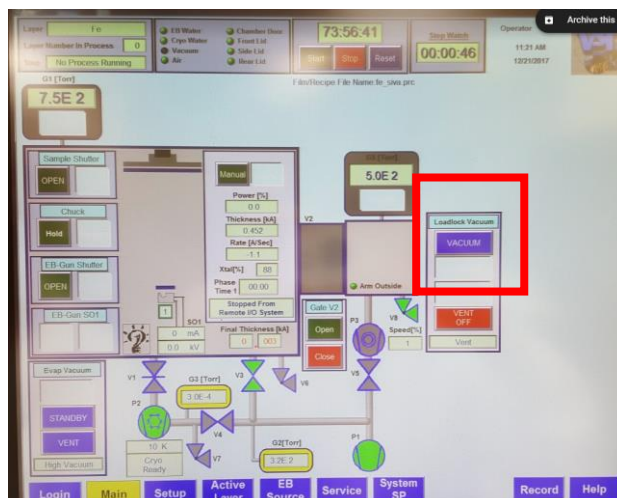
    chamber window.

3. Insert the stage (with your sample) with the stage arm inside the load lock chamber and make sure the stage is in the right position.
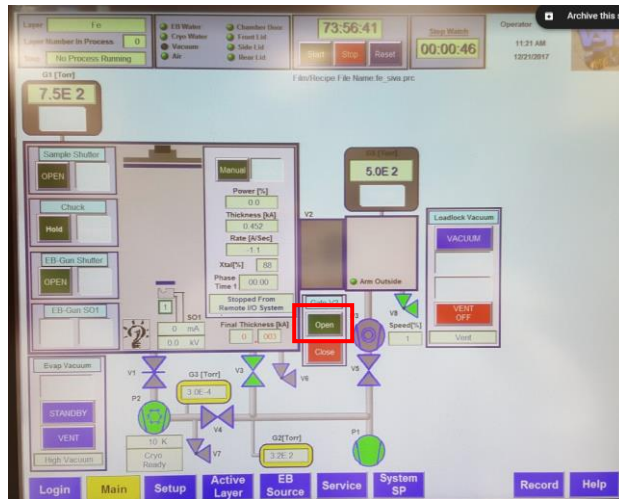

4. Close the load lock chamber window.

5. Press on load lock chamber Vacuum bottom.

6. When there is enough vacuum in load lock chamber the bottom of the gate between the chamber and load lock become green.

7. Press on "open" bottom to open the gate between the chambers.

8. Insert the stage inside the main chamber by the arm. Check that the arm status is changed from "arm outside" to "arm inside".

9. Load the stage to the chamber by pressing in chuck window "hold" bottom.
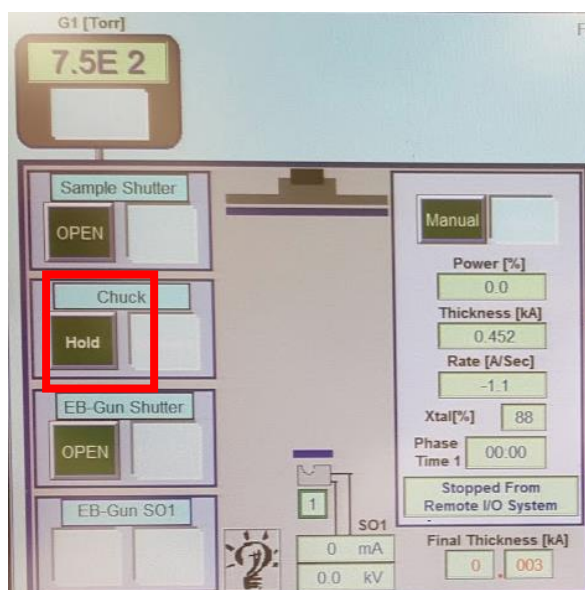
Moving the sample out- Load lock

1. Press "open" to open the gate between the main chamber rand the load lock.

2. Push the arm inside and make sure "arm inside" is written on the screen.

3. In chuck window press on "release" to release the stage from the chamber to the arm.

4. Push the arm outside and make sure "arm outside" is written on the screen.

5. Press on "close" bottom to close the gate between the main chamber and the load lock.

6. Press on "vent" to vent the load lock chamber.

7. Open the load lock chamber and wait for atmospheric pressure.

Deposition process-main chamber

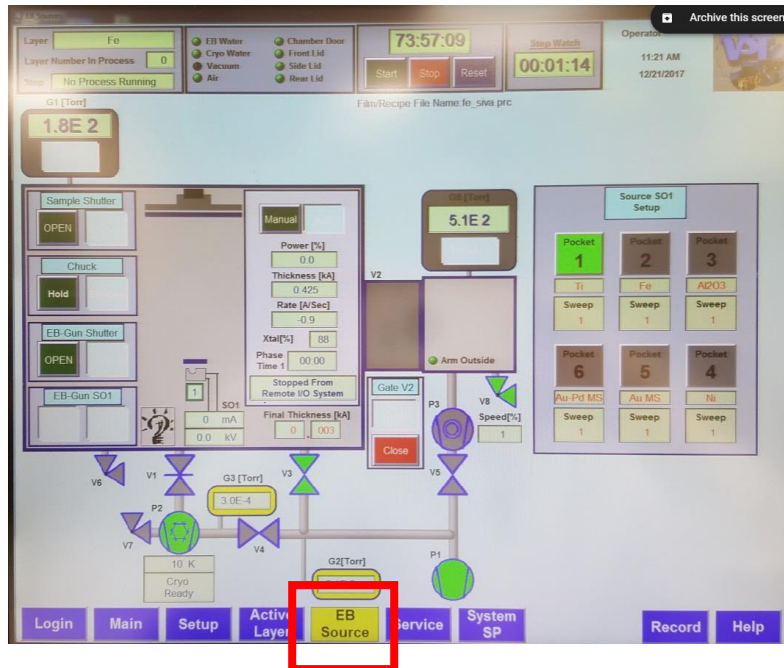1. Make sure that the main chamber pressure is under 2x10^-6Torr.
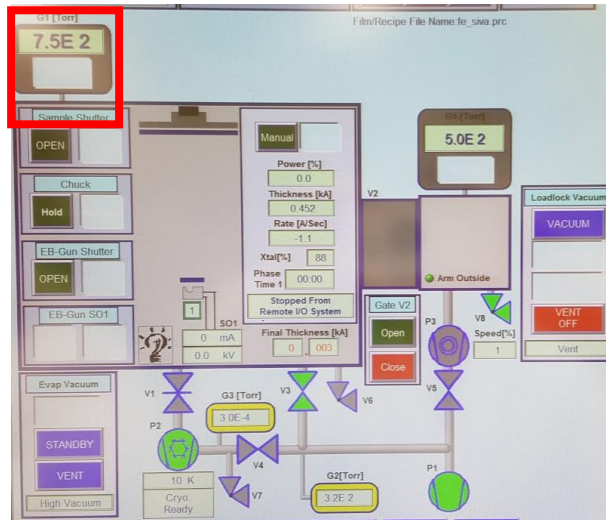

2. Move to "setup" screen.
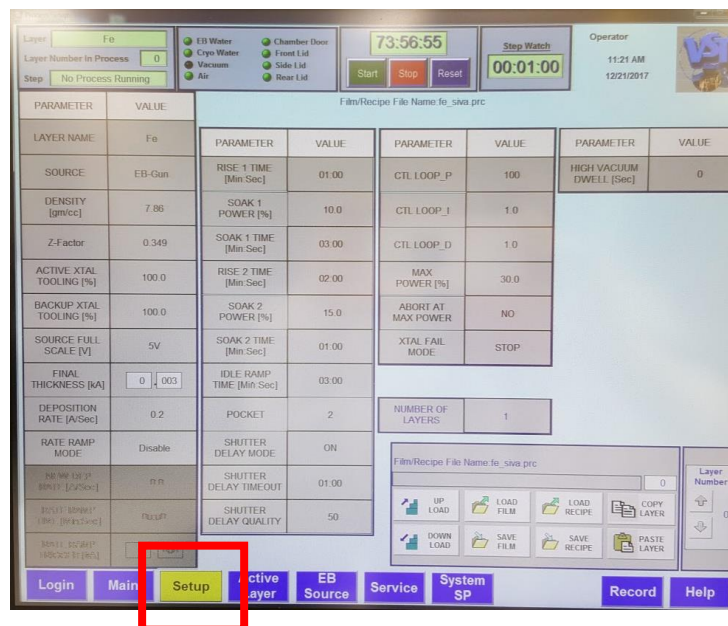
3. Press on "load recipe" and choose recipe from the folder.

4. Check the parameters and if it fit to your process. Most important parameters are: power, final thickness, and material crucible number inside the recipe (that will fit to the material actual crucible number inside the chamber).

5. If you did any changes and you want to save them press on "save recipe".

6. When you done and all parameters are o.k. press on "download recipe".

7. Move to "EB source" screen to make sure the right crucible number.

8. Move to "active layer" screen.

9. Press on "start" bottom to start the process.
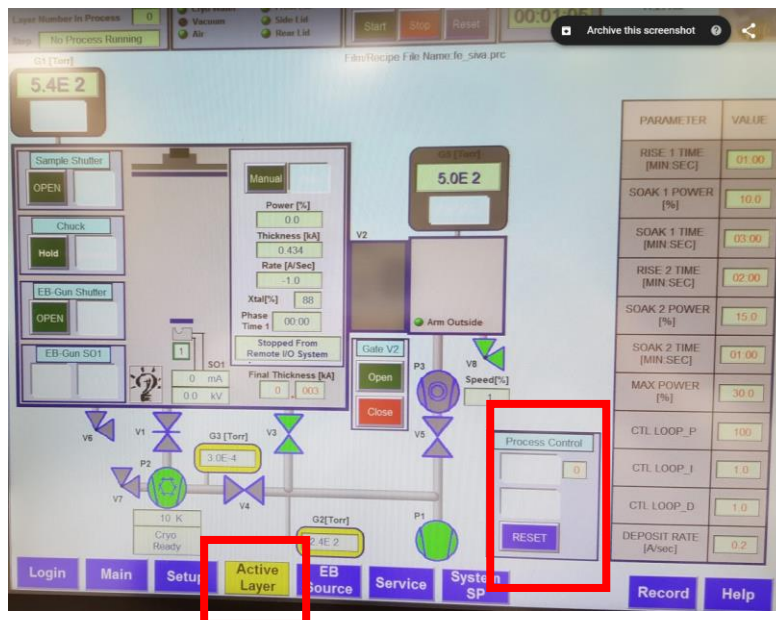
10. When the power start to increase wait for the crucible to be red (to have melting) and then make sure that the beam is at the right position.

Open the main chamber- only for fab staff

1. Press on "Vent" of the main chamber.

2. Make sure the both locks are open and wait for atmospheric pressure (6x10^2Torr).

3. When you done your work make sure all the materials are in the right crucibles, and lock the door with the 2 locks.

4. Press on "Vacuum" bottom and wait for lower pressure then 2x10^-6.