

XACTIX XeF₂ ETCHING SYSTEM SOP

Revised April 2020

Start Up

NOTE: The Power distribution box is mounted on the wall behind the system. Ensure that both the **green lights** on the box are **ON**. If not press the green button to energize the system.

1. Go to your FOM account and login to the tool, it will turn on the computer located to the left of the system. The Xactix controller software should start automatically.
2. Turn **ON** the pump by pressing the green button on the front of the tool.



3. The software will ask for a startup processes always select **Normal**. The tool may take several to complete the startup sequence.
4. After the startup sequence is completed the system will display a login screen.



Login user ID: Cal

Password: none

Loading/Unloading Sample

5. On the main screen of the Xactix software (Figure 1), press **Load/Unload sample**. The system will go through prompts to ensure a correct decision:

Are you sure? Press **YES** if you're sure, **NO** if you're not.

This prompt is provided since the load/unload process can be time consuming and is inconvenient if accidentally started. The system begins chamber purges and flushing cycles to evacuate the chamber.



Figure 1

6. When the chamber is vented, the dialog box below will appear (Figure 2) and you can open the chamber lid.

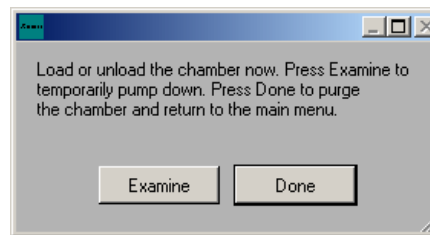


Figure 2

7. Load your sample and close the lid.
8. Press **Done**, the system will go through a purging cycle prior to chamber pump down. As a side note, the **Examine** button only pumps the chamber down, without purges, so that the system can be quickly vented to load the sample. This is very useful when examining a sample away from the system to prevent moisture from accumulating in the chamber. However, it is always necessary to press **Done** before etching the sample.

Performing an Etch

9. From the main screen (Figure 1), click on **Etch Menu**. This opens up the **Etch Menu** screen shown in Figure 3.

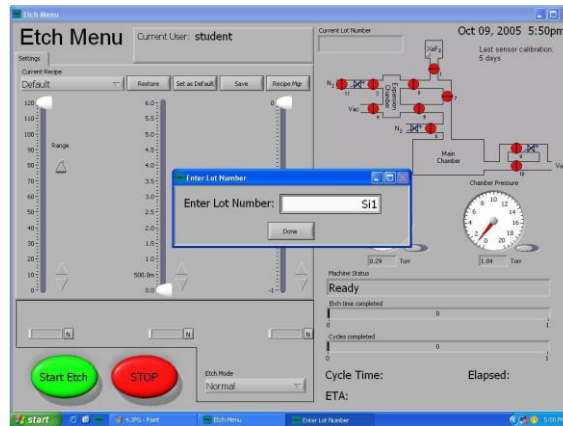


Figure 3

10. Enter a unique **Lot Number** for the etch run to be performed and click **Done**. This information will be maintained in the Xactix system log and allows etch details to be found at a future date.
11. The etch recipe has four parameters on the etch menu screen, No. of Cycles, Etch Time, XeF₂ pressure and N₂ pressure.

NOTE: The **default values** are 10, 30 seconds, 3.0 T and 0.0 T respectively. 10 cycles of 30 seconds each give a total etch time of 5 minutes. The values can be changed according to requirements. However, the maximum XeF₂ pressure is 3.0 T.

12. Click on **Start Etch** to begin etch process.

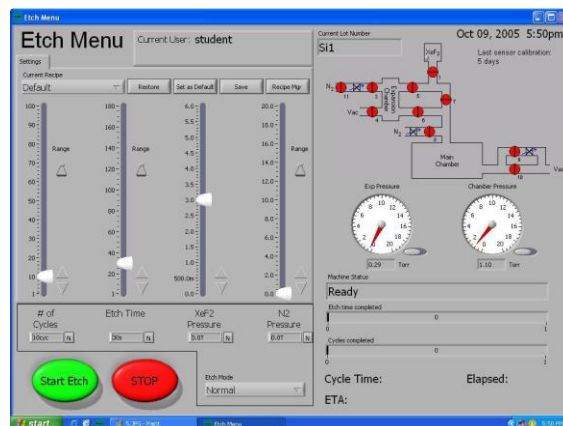


Figure 4

Etch Menu features (Figure 4): On the right side of the **Etch Menu** screen a valve schematic is shown so that the user can monitor the machine operation.

At the bottom of the right side of the screen are two counters.

The **first counter** displays how much time has transpired during the etch portion of the cycle. The **second counter** shows the number of cycles completed.

At the very bottom of the screen;

Start Etch, this is used to begin the etching process;

Stop, this is used to end the etch prematurely;

Change Cycles button which at any time during an etch can be used to add cycles to the etch in-progress.

13. On completion of the etch process, the software reverts to the main screen where **Load/Unload sample** can be selected to remove the sample.
14. Since system must be kept under vacuum when not used, press **Done** to pump down the chamber.
15. Close the software, turn off the computer and press the red button on the front of the tool.
16. Logout from the tool in you FOM account.