



Plasma Diener Etcher Standard Operating Procedure



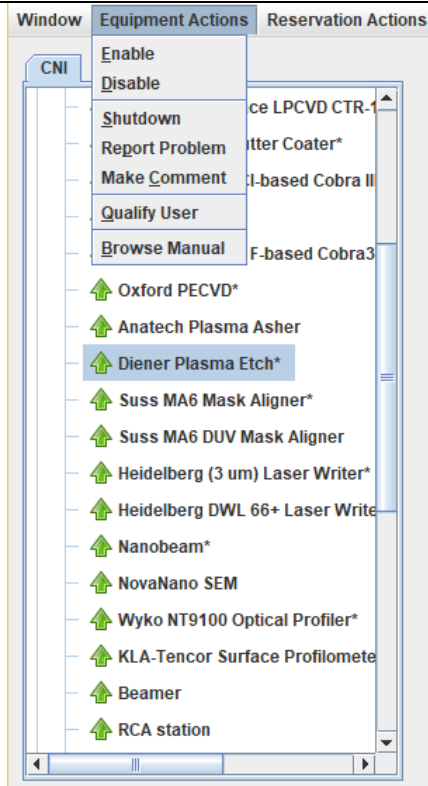
These instructions are intended for reference only, and will *not* replace the thorough training required for proper system operation. Contact a clean room staff member with questions or to report a system problem.

Written by Eyal Aklimi. Edited by Nirit Porecki-Shamay.





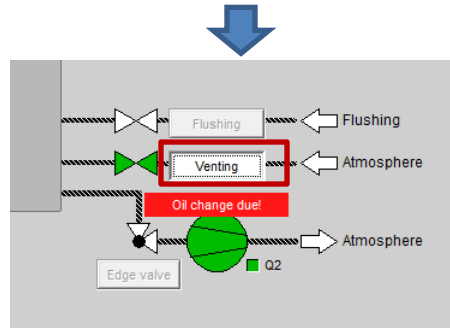
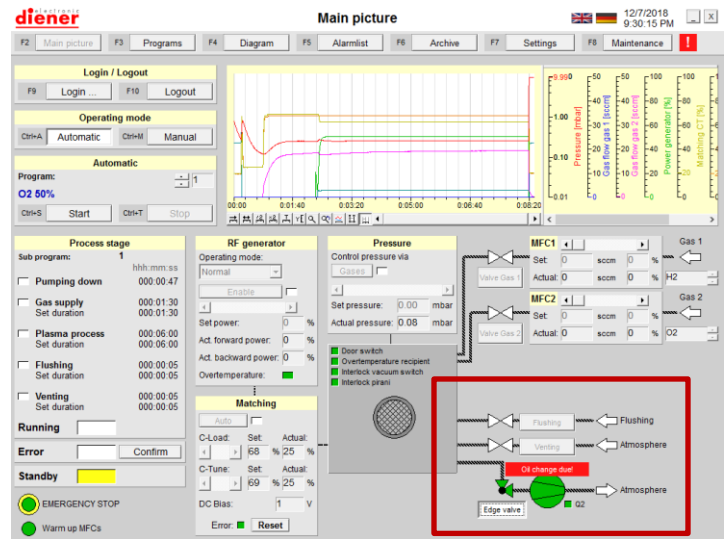
1. BADGER:
Enable the tool in badger.



2. VENT CHAMBER:
On the main screen, click on “Edge valve” to close the pump valve. Then, “Venting” to vent and open the chamber.

Note that you can ignore the warning ‘Oil change due!’ on the screen.

Once the door is popped open, click on “Venting” to stop N2 flow.





3. LOAD SAMPLE:

The sample holder is located on the top of the Diener.

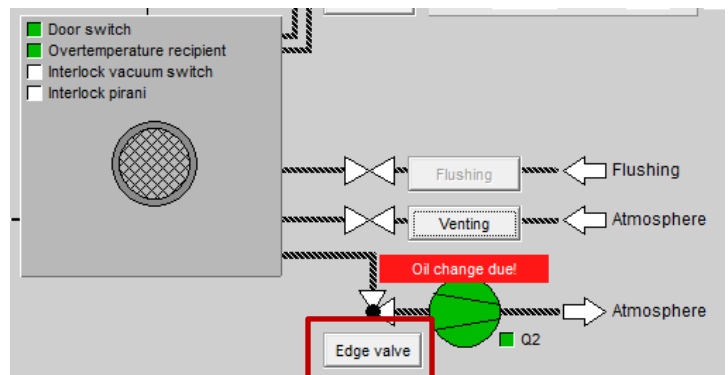
Place your sample on the sample holder and attach it with the screws on the holder. Then insert it inside the chamber.

You can also load your samples directly on the chamber. Be careful that light samples might fly during the flushing and venting steps since the flow is very strong.



4. PUMP CHAMBER:

Close the chamber door and hold it firmly with clicking on the “Edge valve” on the screen.





5. SET UP RECIPE:

Click on “Programs”.

There are 5 pre-set programs (3 for oxygen plasma and 2 for forming gas plasma).

Select the program number you wish to use. You can only adjust the process duration in the recipe. If your process has an additional need, please contact staff.

Press on “Save” and then, “Main picture” to go back to the main screen.

The screenshot shows the diener control interface. The top bar includes function keys F2 (Main picture), F3 (Programs), F4 (Diagram), F5 (Alarmlist), and F6. The main area is divided into sections: Login / Logout (F9 Login ..., F10 Logout), Operating mode (Ctrl+A Automatic, Ctrl+M Manual), and Automatic (Program: O2 50%, Ctrl+S Start, Ctrl+T Stop). A graph on the right shows a multi-line plot over time. A blue arrow points down to the 'Programs' screen, where F2 (Main picture) and F9 (Save) are highlighted in blue. The 'Program number' is set to 2 (highlighted in red), and the 'Duration' is 000:10:00 (highlighted in red).

6. RUN PROCESS:

Operating mode should be ‘Automatic’.

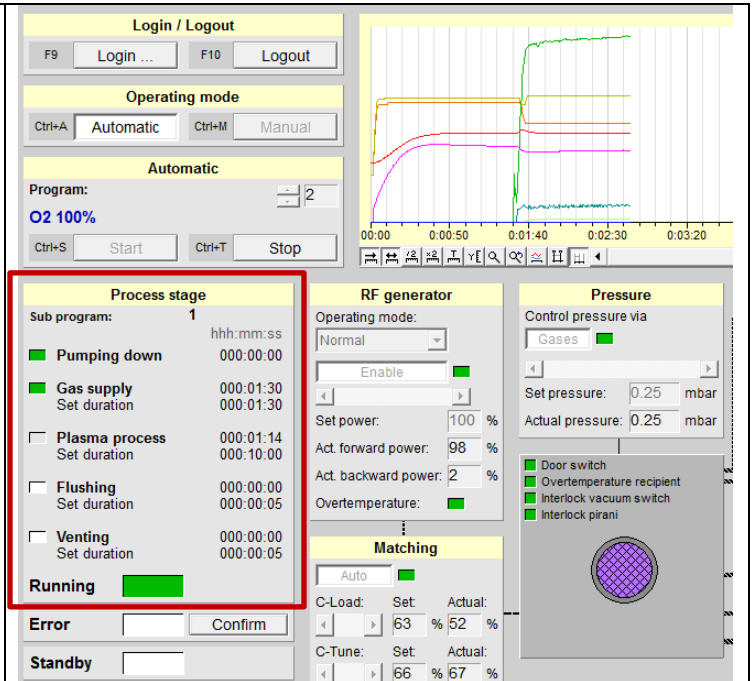
You should select the program you edited on **step 5**. Then, click “Start” and confirm with “Yes”.

The screenshot shows the diener control interface. The top bar includes function keys F2 (Main picture), F3 (Programs), and F4. The main area is divided into sections: Login / Logout (F9 Login ..., F10 Logout), Operating mode (Ctrl+A Automatic, Ctrl+M Manual), and Automatic (Program: O2 100%, Ctrl+S Start, Ctrl+T Stop). The 'Start' button is highlighted in red. Below the interface is a confirmation dialog box with a red background and white text: 'Program O2 100% is selected. Please check that all carriers are inserted. Do you really want to start the program?' with 'Yes' and 'No' buttons.





You can monitor the process progress under 'Process stage' window and on the real-time graph.



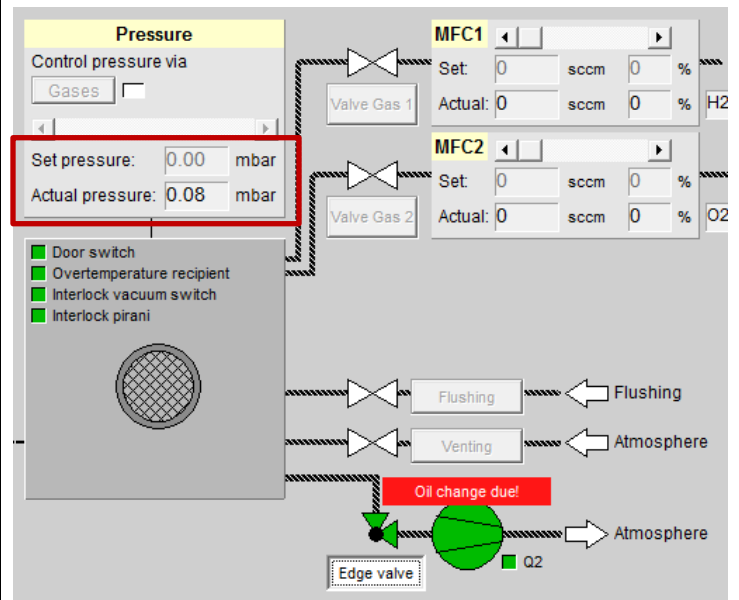
7. UNLOAD SAMPLE AND PUMP DOWN:

After the process is completed the chamber will be vented automatically.

Unload your sample and place the sample holder back to where you found it.

Close the door by holding it firmly as described at **step 4**. Click on the "Edge valve".

Wait until the actual base pressure reaches below 0.12 mbar.





8. LOG FILE:

Log your parameters on the log sheet. It is an excel file that will stay open. This helps users to follow up on process parameters and tool history.

1	Name	Date	Time	Process Time	Power (%)	O2 or H	Comments
3	Smuthi	17/12/15	05:55:00 AM	0:55	50	O2	
4	Smuthi	11/24/15	3:30pm	1:00	100	O2	
5	Smuthi	11/28/15	03:30:00 PM	1:30	100	O2	
6	Martin	01/11/17	02:30:00 PM	1:15	50	O2	
7	Aaron	08/24/18	03:00:00 PM	1:20	50	O2	

9. BADGER LOGOUT:

Don't forget to disable the tool in badger after you're done.

