Harrick Barrel Plasma Etcher Manual

NCF Manual – July 2017

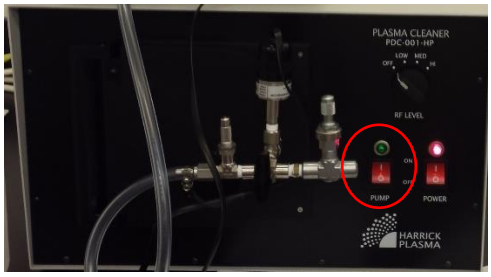
Instrument Details:

- Model: PDC-001 HP
- Maximum RF power: 30 Watts
- Chamber: 6 diameter quartz tube (6” wide, 6.5” long)
- Available Gasses: Oxygen and Nitrogen
- Maximum Flow rate: 50 ccm
- Pressure: 0-2000 mTorr

Startup:

1. Sign into the logbook and record the time in, gases to be used and power to be used (low, med, or hi)
2. Turn the power on

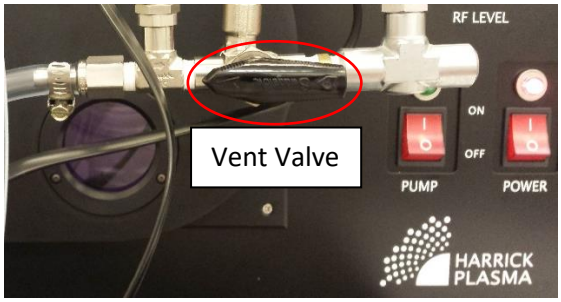
3. Turn the pump on



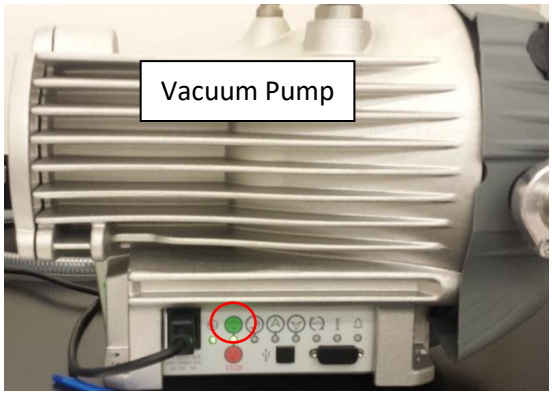
4. Turn the pressure gauge on

Operation:

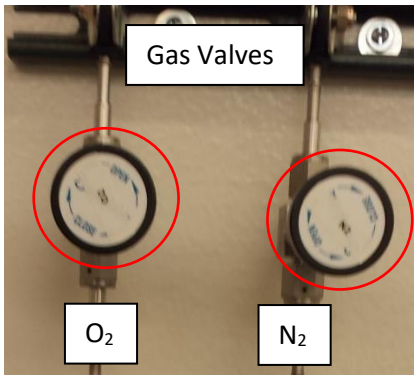
5. Load your samples into the chamber
6. Close the vent valve by turning the arrow knob so it points to the left



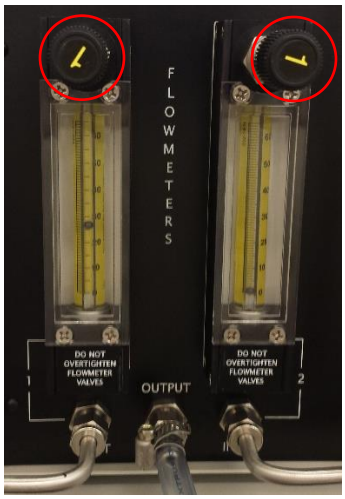
7. Press green start button on the vacuum pump and hold the door shut until the pump becomes quiet (<2000 mTorr on the pressure gauge)



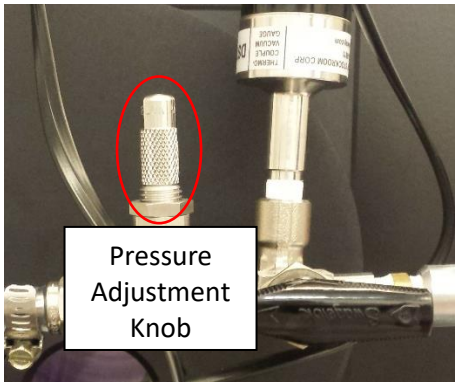
8. Open the desired gas valve(s) (O_2 is on the left and N_2 is on the right)



9. Turn the knob(s) on the flow meter to change the flow rate(s) to the desired value(s)

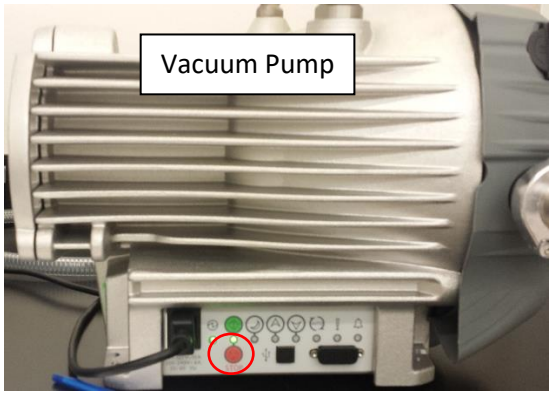


10. Adjust the pressure by turning the silver knob to the left of the vent valve and wait for it to reach the desired level

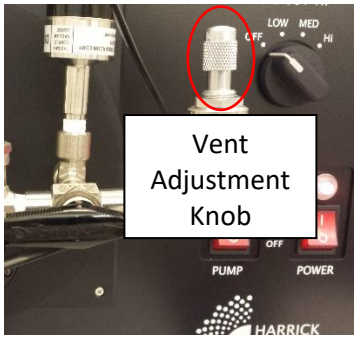


11. Turn the RF power level knob to low, med, or hi to RF and start a timer if desired

12. During the plasma etching cycle, adjust the silver pressure adjustment knob to maintain the desired pressure
13. Turn the RF power knob to off
14. Close the silver pressure adjustment knob by turning it clockwise
15. Press red stop button on the vacuum pump



16. Open the vent valve by turning the arrow knob so it points to the right and make sure the silver vent adjustment knob is opened



17. Unload your samples
18. Repeat steps 4 – 16 for any additional samples

Shut Down:

19. Close the gas valves
20. Close the flow meter valves just enough such that the flow rate is zero
21. Turn the pressure gauge off
22. Turn the pump off
23. Turn the power off
24. Sign out of the logbook