

# OPERATING PROCEDURE CVC 601 Backsputter or Pre-etch

Rev. 12/5/2001

**Complete the substrate loading procedure prior to using this procedure.  
Substrates should be positioned over the shutter and Target #1.**

## Pre-Run Check

1. Ensure that the water recirculator, cryo pump, and mechanical pump are turned on.
2. Check the cryo pump monitor reads **< 20°K**.
3. Check the station water temperature gauges read **< 25°C**.
4. Turn on power to: interlock control panel, automatic valve control, ion gauge control, DC target select.
5. Ensure that the **Gas Inlet Valve** on the vacuum chamber is **CLOSED**.
6. The Ar cylinder in the last chase should be on.
7. Ensure that the water recirculator is **ON** (the interlock lights should be green not red). If the water is off, you must turn on the water recirculator under the table.



## Emergency Power Off

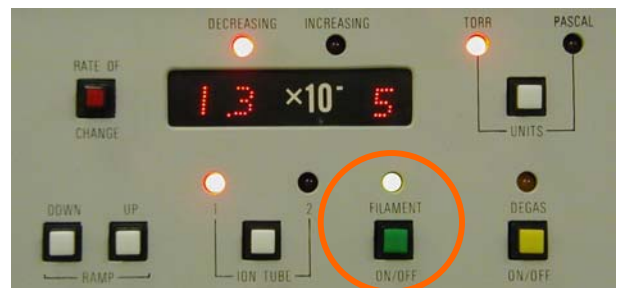
If during operation an emergency occurs, the emergency power off button is located on the left control panel. This will turn off the power to the entire system.



## Operation

**NOTE:** As describe in the LOADING procedures, the substrates to be etched should be positioned over Target #1 with the shutter over the target.

1. Turn **OFF** the **Ion Gauge** by pressing and releasing the green **FILAMENT ON** switch on the **Ion Gauge Controller**.



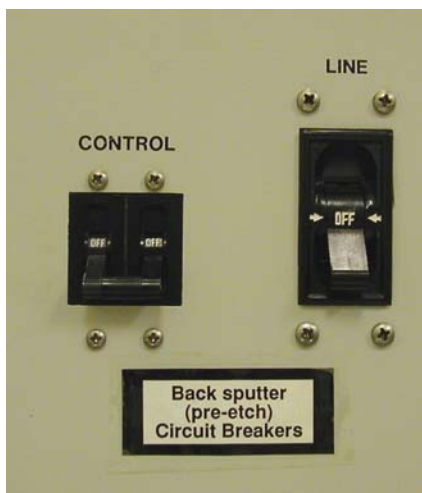
- Close the throttle valve by turning the knob to **AUTO** on the **Throttle Valve Controller**.



- Place the **flow valve controller** on the **Baratron panel** in the **CLOSED** position (red LED will light in 1/2 min).



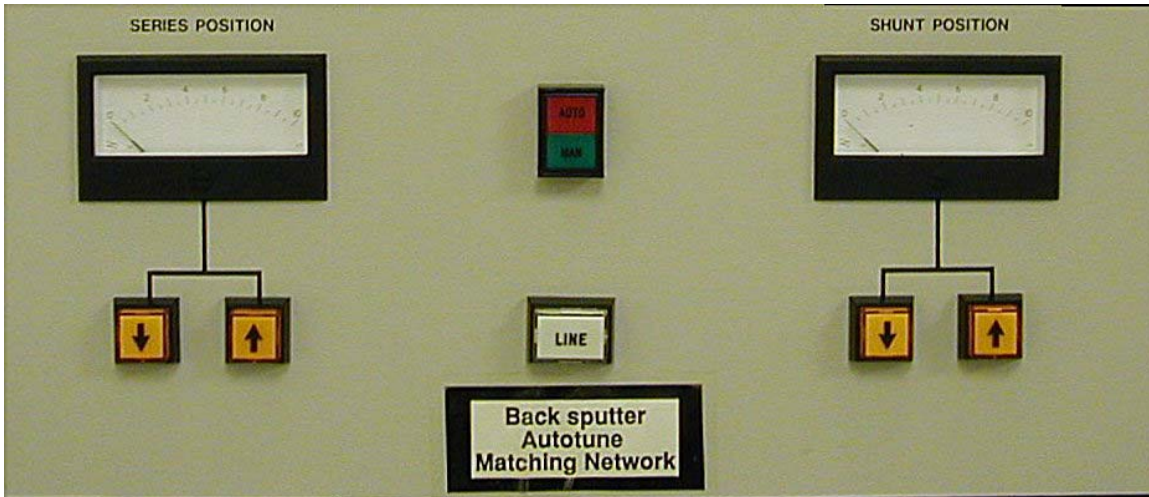
- OPEN** the **Gas Inlet Valve** on the vacuum chamber.
- Ensure **Range** is at **.01**. Place **SET POINT** controller on **Baratron panel** to the desired etch pressure (about 9 mtorr).
- Put the **flow valve** on the **Baratron panel** in **AUTO** and wait for pressure to stabilize.



- The back sputter power supply is located on the lower left of the instrument rack. Turn **ON** the **LINE** breaker and the **CONTROL** breaker. The white **Power** button on the power supply should be lit.



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8. Ensure the power level knob is rotated completely counter-clockwise (lowest setting).
9. Turn **ON** the **LINE** on the autotune supply for the matching network. Ensure the autotune in **Auto** (if not press the red button labeled **Auto**).
10. Check that the value of the **series** is approx **3.8** and the **shunt** is approx. **3.5** on the autotune supply. You may change them by pressing **MANUAL** and using the arrow buttons to adjust the reading — make sure to put the tuner back into **AUTO**.
11. Press **RF ON** (red button on power supply). Ensure that the auto-tune matching network minimizes the reflected power.
12. Rotate the RF power level knob clockwise until the power level is **100W** forward power.
13. Manually time the backsputter etch. Once the etch time is complete, press **RF OFF** (blue button on power supply).
14. Turn **OFF** the auto-tune matching network, press **Line** on tuner.
15. Turn **OFF** the breakers **LINE** and **CONTROL** on the bottom on the rack.

## CONTINUE WITH THE DEPOSITION PROCEDURE