**Updated in May 2020**

**Gold Sputter Coater**

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*Model*: Edwards S150B; *Manufacturer:* BOC Edwards, UK

**INSTRUCTION**

1. **To power on:** push down two black buttons.
2. Make sure that **Gas/Air Admit** and **Pressure Control** knobs are closed (finger tight).

* Open the chamber by holding the metal lid, and carefully set it on hold.
* The chamber should be at atmospheric pressure when not in use.
* Remove the inner (and outer cylindrical if any) wall of the chamber.
* Place the samples (which should be on metal stubs) onto the sample holder (a metal plate with 16 holes) using stub tweezers.
* Put sample holder inside the chamber and close the lid---MAKE SURE THE LID IS TIGHT AND NO LEAK.

1. Press **RP** button (roughing pump) to create a vacuum in the chamber.
   * Wait for the pressure to drop to close to the black line on the pressure gauge at less than 1x10-1atm. It will take about 5-10min.
2. Open the main valve on the top of the argon cylinder (not the taped small valve!).  Purge the chamber with argon by opening (counterclockwise) the **Gas/Air Admit** knob (the pressure meter reaches at 0 atm).
3. Close the **Gas/Air Admit** knob and keep pumping until pressure is less than 1x10-1atm again.
4. Let argon gas into the chamber again by gradually turning **Pressure Control** knob until pressure rises to about 3x10-1 mbar (the needle is aligned with the blue line on the glass window) and leave the knob at that position.
   * Set **timer at 1 minute** and HT scale reading number at 7-8:  most times they are done already.
5. Press **both HT and Time buttons** simultaneously**.**  The indicator lamp lights. The purple glow discharge strikes in the chamber.

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1. Using the **Pressure Control** knob to keepvoltageat about 1 kV. If they vary or the glow is flickering, adjust the **Pressure Control** to stabilize.
2. When time is over (auto stop), close the **Pressure Control** knob. Then press **HT, Time** and **RP** buttons to release them.
3. Let argon gas into the chamber to bring the pressure up to atmosphere by turning the **Gas/Air Admit** knob counterclockwise (widely). After about 20 sec, the chamber can be opened.
4. Close the **Gas / Air admit** knob and close the valve on the top of the Argon tank.
5. Remove the samples from the chamber, using tweezers.  The samples are now ready for imaging in the SEM.
6. Ensure the **Pressure control** and **Gas / Air admit** knobs are closed, but **NOT TOO TIGHT.**
7. **To power off: push down both red buttons.**