

Operating Instructions
Hummer VI-A Sputter Coater

1. Check that:
 - a. Timer switch is on “Auto” and knob is at “O.”
 - b. Gas Control valve is closed (do not over tighten).
 - c. Voltage Control switch is “Off.”
2. Open sample chamber.
3. Place sample in chamber.
4. Close lid.
5. Turn main power on (red button – lower right side of panel).
6. Set Mode switch to “Plate DC.”
Note: Do not switch between modes when high voltage is on.
7. When pressure reaches 20 on the vacuum gauge, flush the chamber with argon:
 - a. Open main valve on the argon tank.
 - b. Open Gas Control knob until pressure rises to 200.
 - c. Flush for 10 – 15 seconds; then close gas control knob.
 - d. Repeat 2 – 3 times.
8. Regulate gas pressure with Gas Control knob to maintain 55 – 70 millitorr.
9. When gas pressure stabilizes, turn Voltage Control switch to “ON.”
10. Turn Timer switch to “Auto” and set dial to 2.5 minutes.
11. Turn Voltage Control knob clockwise to achieve approximately 10 milliamps.
12. Alternately, adjust gas pressure and voltage knob to maintain approximately 10 milliamps current and 55 – 70 millitorr pressure.
13. After timer shuts off, turn main power switch off and turn Voltage Control knob to “O.” Turn Voltage Control switch “Off.”
14. When atmospheric pressure is reached in the sample chamber (i.e. lid is loose), open lid and remove sample.
15. Close Gas Control valve.
16. Close main valve on the argon tank.

OPERATING INSTRUCTIONS

POLARON SPUTTER COATER

1. Carefully raise hinged top to support position and load stubs onto evaporation stage.
2. Close top gently making certain that O-ring is free from debris.
3. Turn operation switch to “pump” position and gently but firmly hold hinged top down until vacuum registers on meter. Argon leak valve should be closed.
4. Switch on power to film thickness monitor and temperature monitor. Do not change density setting (18.0 g/cc) on thickness monitor, but zero unit using right-hand knob.
5. Open tank valve on argon cylinder. Regulated pressure should not be above 5 psi.
6. When vacuum meter reads less than 0.1 Torr, open Argon leak valve by turning counterclockwise about 5-6 turns until needle shows reading of greater than 0.2 Torr. Close leak valve until vacuum once again is less than 0.1 Torr. Repeat entire leak procedure 2-3 times for most specimens.
7. With Argon leak valve closed and vacuum reading of approximately 0.04 Torr, turn operations switch to “Set HT.”
8. Carefully turn high voltage selector to a reading of 2.4 KV.
9. Adjust Argon leak valve until current meter reads approximately 20 mA and is stable. By this time, temperature should read approximately 3°C.
10. When coating is completed, turn high voltage selector to “O” (fully counterclockwise).
11. Turn operation switch to “OFF.”
12. Open Argon leak valve 3-4 turns counterclockwise to admit gas to chamber. Wait until temperature reading is up to at least 16°C before opening chamber.
13. Turn off main valve on Argon cylinder. Close argon leak valve gently on instrument.
14. Turn off temperature monitor.
15. If vacuum persists, raise lead stem on top of chamber to admit air.
16. Record total thickness (in nanometers) from film thickness monitor in log, and switch off unit.
17. Carefully open sample chamber and quickly remove coated stubs.
18. Reclose unit after use and record information required in instrument log book – Report any malfunctions at once!