

ISI SEM

Initial start up

- 1) Turn on cooling water
- 2) Check yellow **SHUT** button is depressed (behind specimen chamber)
- 3) Turn on red **POWER** switch
- 4) Switch on rotary pump (**R.P.**)
- 5) Wait 20-30 seconds. Switch on diffusion pump (**D.P.**)
- 6) Turn on ETP/SEMRA box (switch at back), then press **1** on front of box
- 7) Wait 20 minutes for diffusion pump to warm up
- 8) To load specimen, go to instruction 3 in next section.
- 9) If specimen already in chamber, go to instruction 8 in next section

Changing specimen and operation

- 1) Turn **EMISSION MANUAL** control fully anticlockwise
- 2) Turn off red **OPERATION** switch. Wait 15 seconds
- 3) Depress red **AIR** admit button (behind specimen chamber)
- 4) Before opening specimen chamber, make sure stage is unclamped and tilt angle is 0°
- 5) Release specimen chamber door lock
- 6) Exchange sample
- 7) Close specimen chamber door and lock
- 8) Press blue **OPER** vacuum button (behind specimen chamber)
- 9) Select accelerating voltage
- 10) When green vacuum lamp (**V.L.**) comes on, the red **OPERATION** switch can be turned on
- 11) Select **SE** on box between column and console. Press **W.F.M.**, select low mag, scan mode Normal, Brightness & Contrast at 9 o'clock
- 12) Increase filament current slowly (**NEVER PAST 2 O'CLOCK POSITION!**) to obtain maximum height of line scan on CRT. (If line does not move the filament may be burnt out). When maximum amplitude obtained, back off filament current slightly
- 13) Check gun alignment
- 14) Press **S.E.** for secondary electron image. For back-scattered electron images, wind in Robinson detector and select **BSE** on box between column and console.

Switching off

- 1) Make sure specimen chamber is evacuated
- 2) Turn **EMISSION MANUAL** control fully anticlockwise
- 3) Turn off red **OPERATION** switch
- 4) Depress yellow **SHUT** button (behind specimen chamber)
- 5) Turn off diffusion pump (red **D.P.** switch)
- 6) Turn ETP/SEMRA box off
- 7) Wait 20 minutes for diffusion pump to cool
- 8) Turn off red **POWER** switch
- 9) Turn off cooling water

POWER FAILURE

Turn OFF red **OPERATION**, **D.P.** and **POWER** switches.

Press in yellow **SHUT** vacuum button (behind specimen chamber)