

Primary Column Alignment

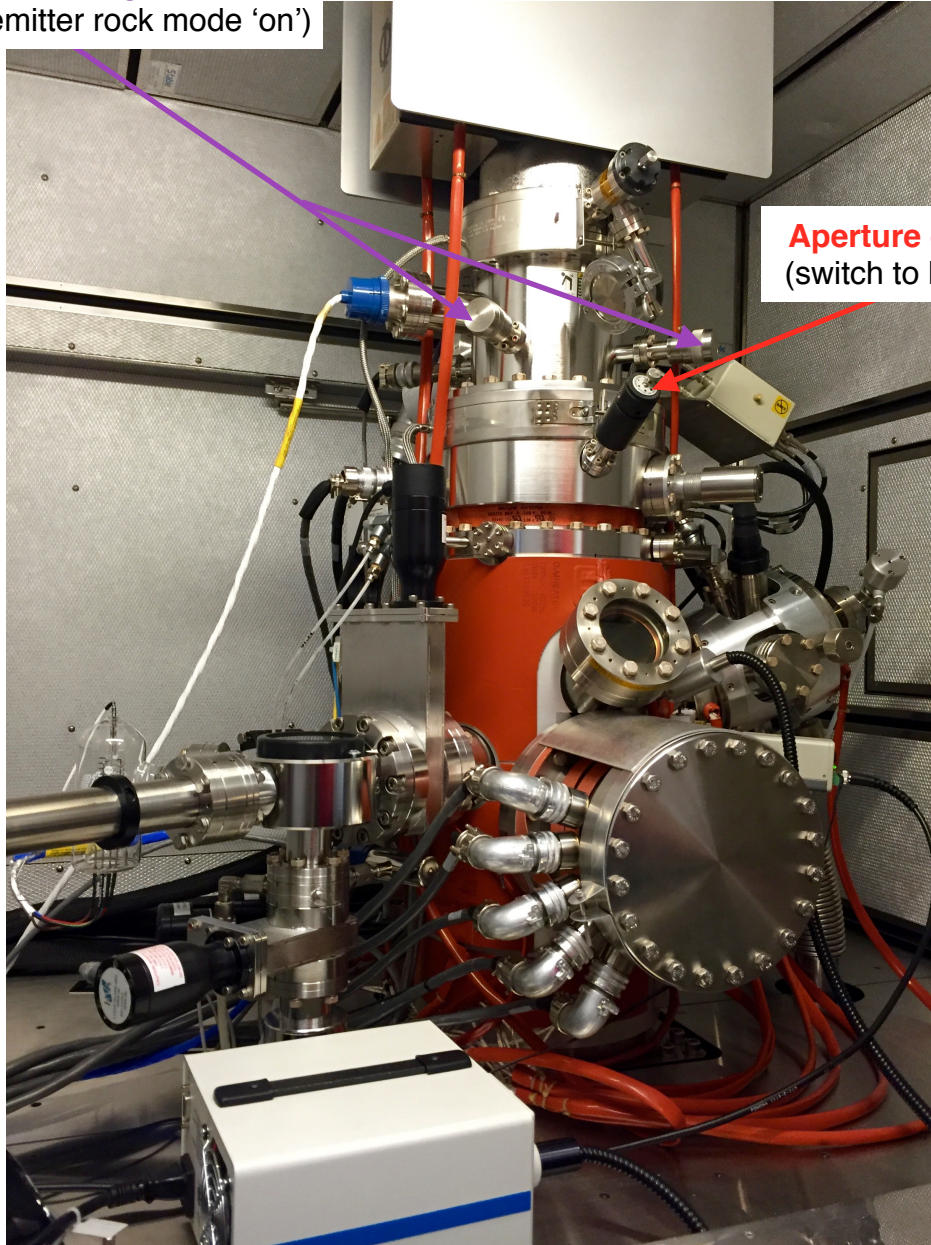
(see section 5.3.2 in the maintenance manual)

- (1) Load 10kV10nA setting
- (2) Optimize the focus, and stigmation
- (3) Adjust the wobble
 - (a) SEM window → SEM flow
 - (b) center the image on a small feature (magnification ~3000)
 - (c) click on 'scan' icon (image start wobbling)
 - (d) reduce the wobbling as much as possible by moving the mouse in vertical and horizontal directions
- (5) Go to magnification of about 1000
- (6) Manually switched the aperture objective to bore hole position (largest aperture)
 - ½ turn clockwise for each aperture (there are 3 apertures)
 - Confirm the position by monitoring the beam 'read beam'
 - small aperture = about 10 nA
 - bore hole = about 20 nA
 - to go bore hole, you should do 1 full turn clockwise
- (7) In SEM window, go to SEM advanced properties and switch the Emitter Rock 'ON' (make sure that emitter rock is set at 3.0 V)
- (8) Manually (slowly) adjust the two knobs of the 'Electron Source Alignment' to eliminate the wobble

	Original position	New position
Left	2.10	2.15
Right	5	12

- (9) Manually switch back the 'Aperture objective' to the small beam position: 1 full turn counter-clockwise
- (10) Re-optimize the focus, stigmation and wobbler

Electron source alignment
(adjust beam in emitter rock mode 'on')

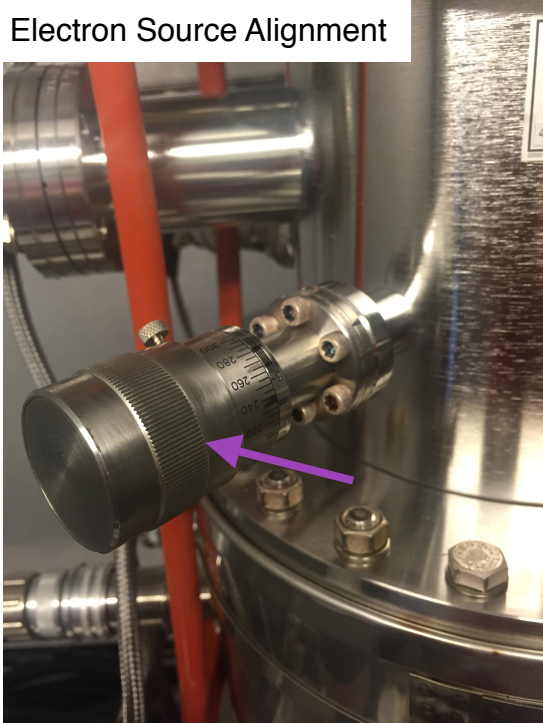


Aperture objective
(switch to bore hole)

Aperture objective



Electron Source Alignment



Monitor beam value (bore hole position)

