

Typical Operating Procedure

1. Sign name in logbook
2. Switch on main power on power strip (right side).
3. Switch on nitrogen gas to cool UV lamp. [Fig 1]
4. Switch on UV POWER supply below aligner. [Fig 2a]
5. Press Lamp button. [Fig 2b]
 - Note:** If alarm sounds, switch off UV POWER [Fig 2a], and repeat steps 4-5 until alarm no longer sounds.
 - Note:** Record UV power (~190W) and number of tries in logbook.
6. Press red POWER button on front panel. [Fig 3]
7. Loosen mask chuck tension screws. [Fig 4]
8. Rotate sample stage lever [Fig 5] to DOWN.
9. Remove mask chuck [Fig 6] and turn over.
10. Carefully place glass mask, pattern-side up, on mask chuck, covering vacuum seal. [Fig 7]
11. Press VACUUM MASK button. [Fig 3]
 - Note:** Ensure glass mask is securely sealed to mask chuck.
12. Turn mask chuck over and slide into stage. [Fig 6]
13. Tighten both tension screws. [Fig 4]
14. Pull sample stage fully out to right. [Fig 8]
15. Place sample on vacuum holes on sample stage.
16. Cover all remaining vacuum holes with glass shims.
17. Slide sample stage fully in to left. [Fig 9]
18. Locate sample in stereoscope using stereoscope manipulator arm. [Fig 10]
19. Rotate sample lever [Fig 5] toward UP position until sample is better focused in stereoscope.
20. Align sample with mask pattern using the x [Fig 11], y- and rotational [Fig 12] micrometers.
21. Rotate sample lever [Fig 5] fully UP until a click sound (CONTACT) is noted.
 - Note:** When sample is raised fully to mask, shifting and rotational misalignment between sample and pattern may occur. Attempt to correct by releasing sample lever (toward DOWN), re-aligning sample with micrometers, and repeating step 21 until final alignment is satisfactory.
 - Note:** If final alignment of sample and pattern remains unsatisfactory, it is often more efficient to completely rotate sample lever DOWN, [Fig 5] slide sample stage fully out to right, [Fig 8] and ensure sample stage is seated correctly (note small alignment pin beneath horseshoe-shaped sample stage platform [Fig 13]), then slide sample stage fully in to left, [Fig 9] and repeat alignment.
22. If alignment is satisfactory, dial correct exposure time. [Fig 3]
 - Note:** Typical exposure time is 30 s.
23. Press EXPOSURE button. [Fig 3]
24. Manually pull UV housing fully forward and hold it in place.
 - Note:** UV housing tends to slide backward, shutting off UV lamp.
25. After exposure time expires, push UV housing fully back.
26. Rotate sample lever [Fig 5] to DOWN position.
27. Slide sample stage fully out to right. [Fig 8]



Fig 1



(a)



(b)

Fig 2



Fig 3



Fig 4



Fig 5



Fig 6

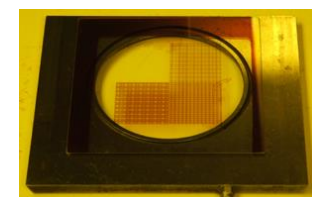


Fig 7

28. Remove sample.
29. Slide sample stage fully in to left. [Fig 9]
30. Loosen mask chuck screws. [Fig 4]
31. Slide mask chuck forward to remove. [Fig 6]
32. Turn mask chuck over onto clean surface. [Fig 7]
33. Press VACUUM MASK button to release mask. [Fig 3]
34. Remove glass mask from chuck.
35. Rinse patterned side of glass mask with acetone, dry with compressed N₂, and store in dust-free box.
36. Press POWER button. [Fig 3]
37. Switch OFF UV power. [Fig 2a]
38. Wait 2 minutes.
39. Switch off cooling nitrogen. [Fig 1]
40. Switch off main power at power strip to right of aligner.

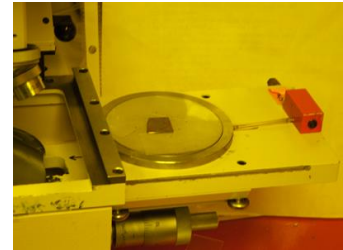


Fig 8

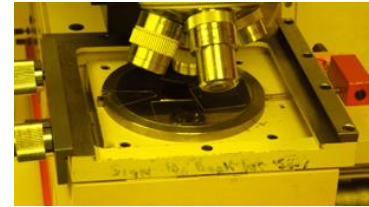


Fig 9



Fig 10

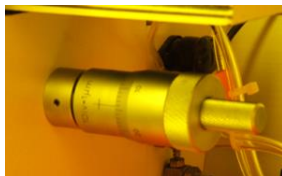


Fig 11

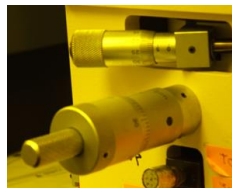


Fig 12

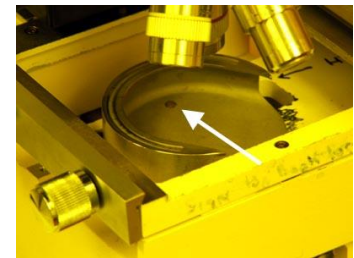


Fig 13