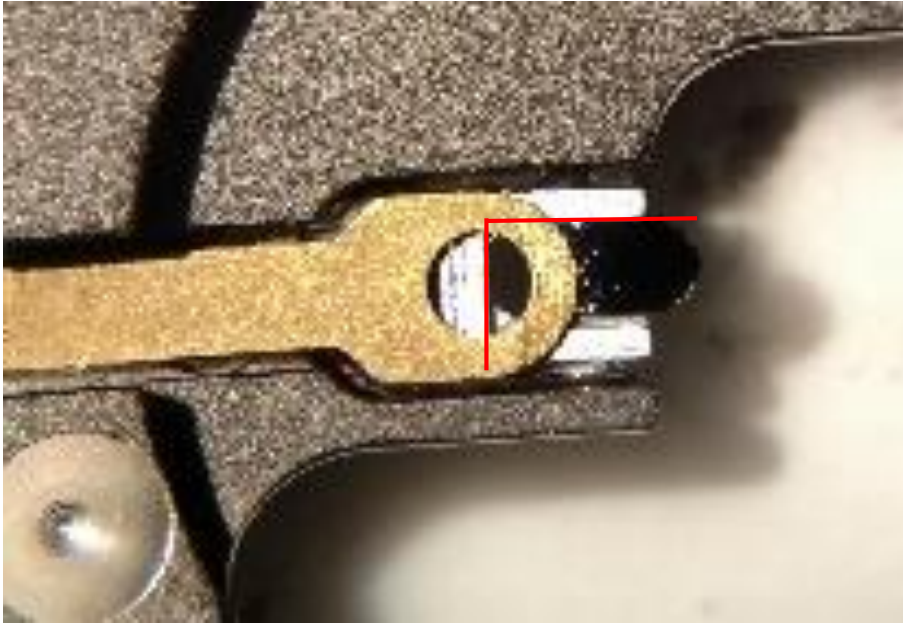
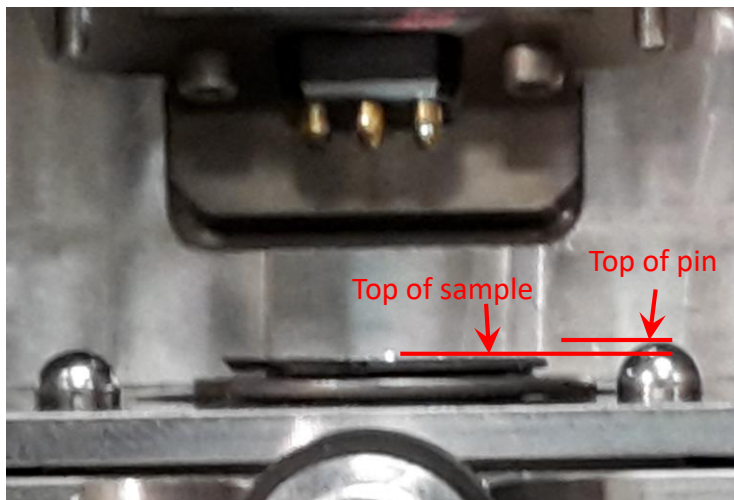


MultiMode 8 Quick Guide

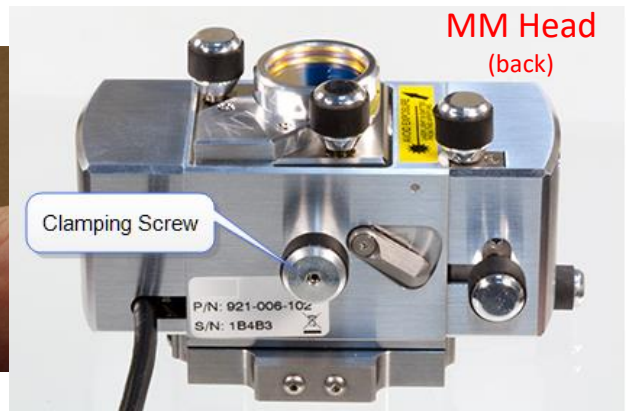
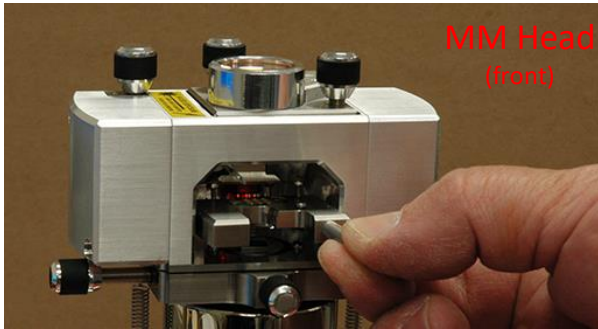
1. Load probe into probe holder as shown below. Probe placed in upper left corner of recess.



2. Log in to your GMSF Equipment Kiosk session or Start a Walkup Session.
3. Launch NanoScope 9.7 & Load Experiment.
4. Place your sample, attached to a magnetic disc, on the top of the scanner.
5. **Check and adjust sample height. If surface of sample is above the two side reference pins, hold toggle switch on microscope base in UP position until sample is below the two reference pins as shown below.**



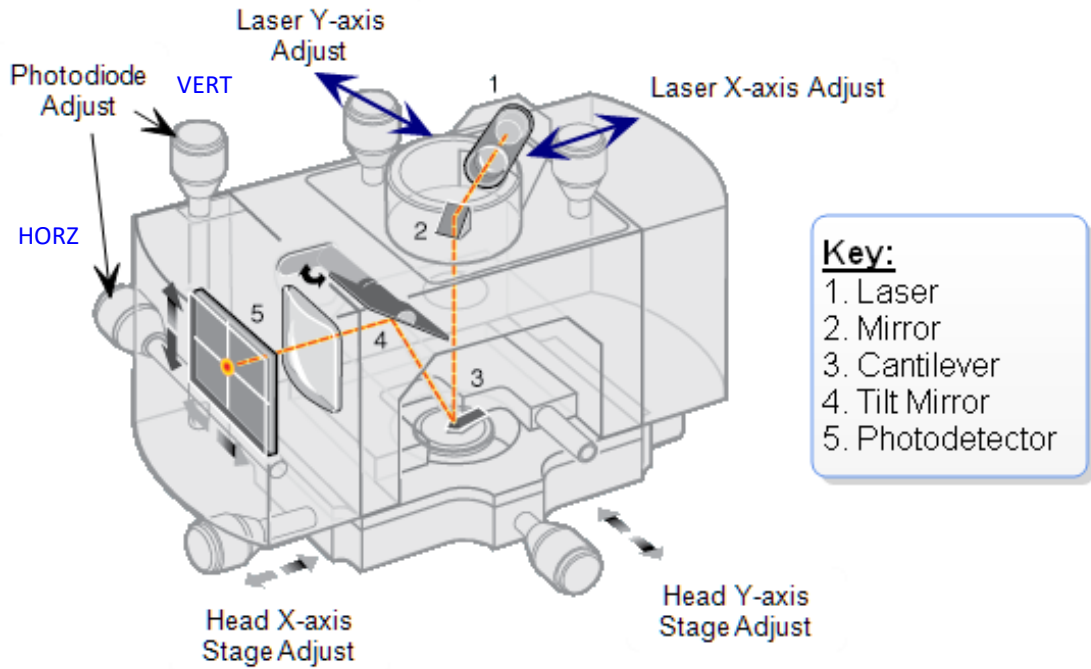
6. Insert probe holder completely into *Head*, taking great CARE to clear the sample. Allow it to fall onto the reference pins. Tighten clamping screw on back of Head to secure probe holder .



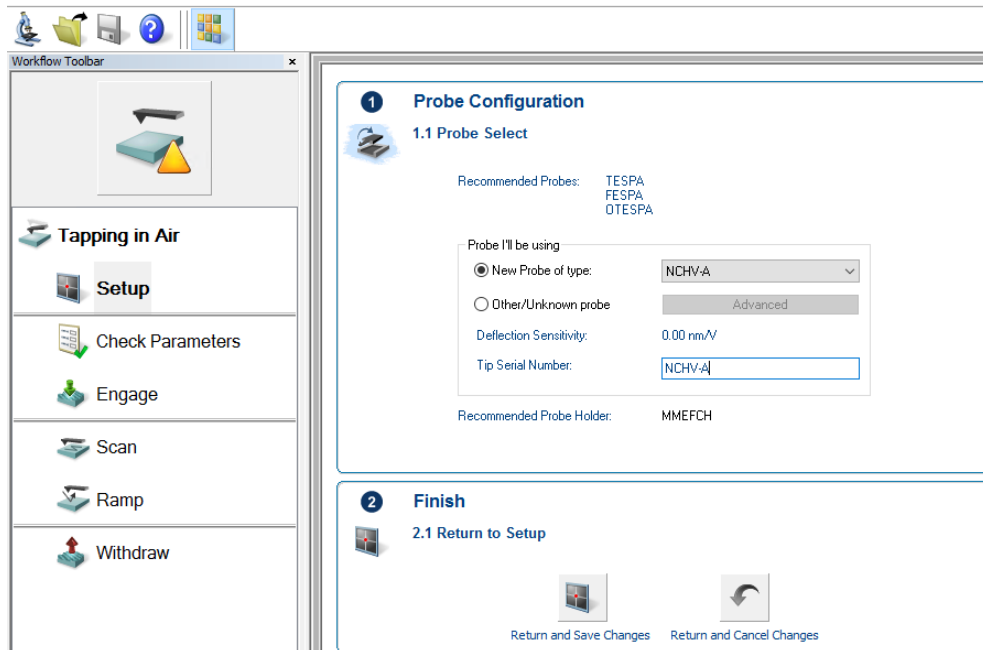
DO NOT MOVE ANY POSITIONING KNOBS UNTIL LASER HAS BEEN ALIGNED TO THE PROBE!!!

LASER ALIGNMENT TO PROBE

7. Move the Y laser positioning knob at center rear on top of *MM Head*. Do not turn more the $\frac{1}{2}$ turn in CW and CCW. Maximize the SUM on the Microscope display.
8. If no SUM is detected, move X positioning knob CW $\frac{1}{8}$ — $\frac{1}{4}$ turn and repeat movement with Y knob.
9. Repeat step 9 until SUM is detected. Both ScanAsyst and NCHV-A probes will get $\sim 6V$ or more.
10. If you are unable to detect any signal, turn on power to camera illumination (top of computer) and adjust intensity to $\sim \frac{1}{2}$ way.
11. Select SETUP under the *Workflow Toolbar* on software (upper left).
12. Lower camera until you see the probe come into your field of view at live image. If you contact the top of the MM Head without seeing the probe, it is likely located off camera to the right. Move X positioning knob located on black base under microscope until you see the probe come into view. Position to center and focus to confirm probe is in field of view .
13. Continue to lower camera until you can focus on the sample surface.
14. Lower probe by pressing and holding the DOWN switch on the base of the microscope. **STOP** before perfect focus on probe. **Perfect focus will result in crashing the tip into the sample! Allow a little fuzziness around the edges.**
15. Using Vertical Photodiode adjustment knob at top left of MM Head, set VERT to zero. Using Horizontal Photodiode knob located in back left of MM Head, set HORZ to zero; ± 0.25 is acceptable for both. (*see image next page*)

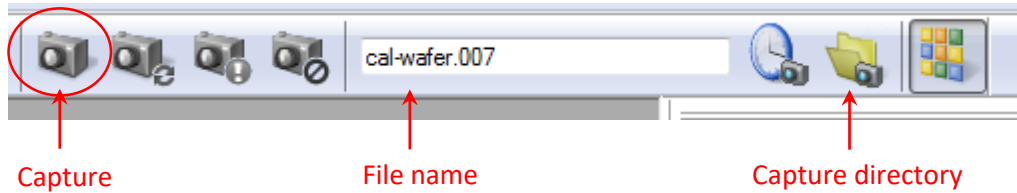


16. At *Setup*, select your probe type under the drop-down menu and enter it in *Tip Serial Number* field. Select *Return and Save Changes*. If your probe is not available in the list, contact Diana.



17. If you are using NCHV-A probe, at the next screen, select Auto Tune. Not necessary for ScanAsyst probes.

18. Select *Check Parameters* at the Workflow Toolbar. Enter starting *Scan Size*.
19. Select *Engage*.
20. Once successfully engaged on the surface, parameters can be modified.
21. Increase Integral Gain (except with ScanAsyst) to optimize scope mode trace/retrace curves. Typically Proportional Gain is 2x Integral Gain. Increase each slowly until noise is observed. Then decrease slightly. Once image is optimized, at the upper right of the display, select your *capture directory*, enter a *file name* and *Capture* image.



22. Save your data in the *All Users* folder located on the desktop and the e: drive. You are ultimately responsible to take your data with you on a virus-free storage device or send the data to a dropbox or email. EMC is not responsible for storing your data.
23. Follow the steps for ending your session on the next page.

MultiMode 8 Shut Down

1. Withdraw tip (hit withdraw on Toolbar 3-4 times to increase tip-sample spacing).
2. Carefully remove your probe.
3. Remove your sample and return stainless steel disc to petri dish.
4. Close NanoScope software.
5. **Turn off illumination.**
6. **Select FINISH on your session at the equipment kiosk.**
7. Log off equipment kiosk.
8. If you require additional help scanning your samples, or, for any questions or concerns email diana.convey@asu.edu with details.