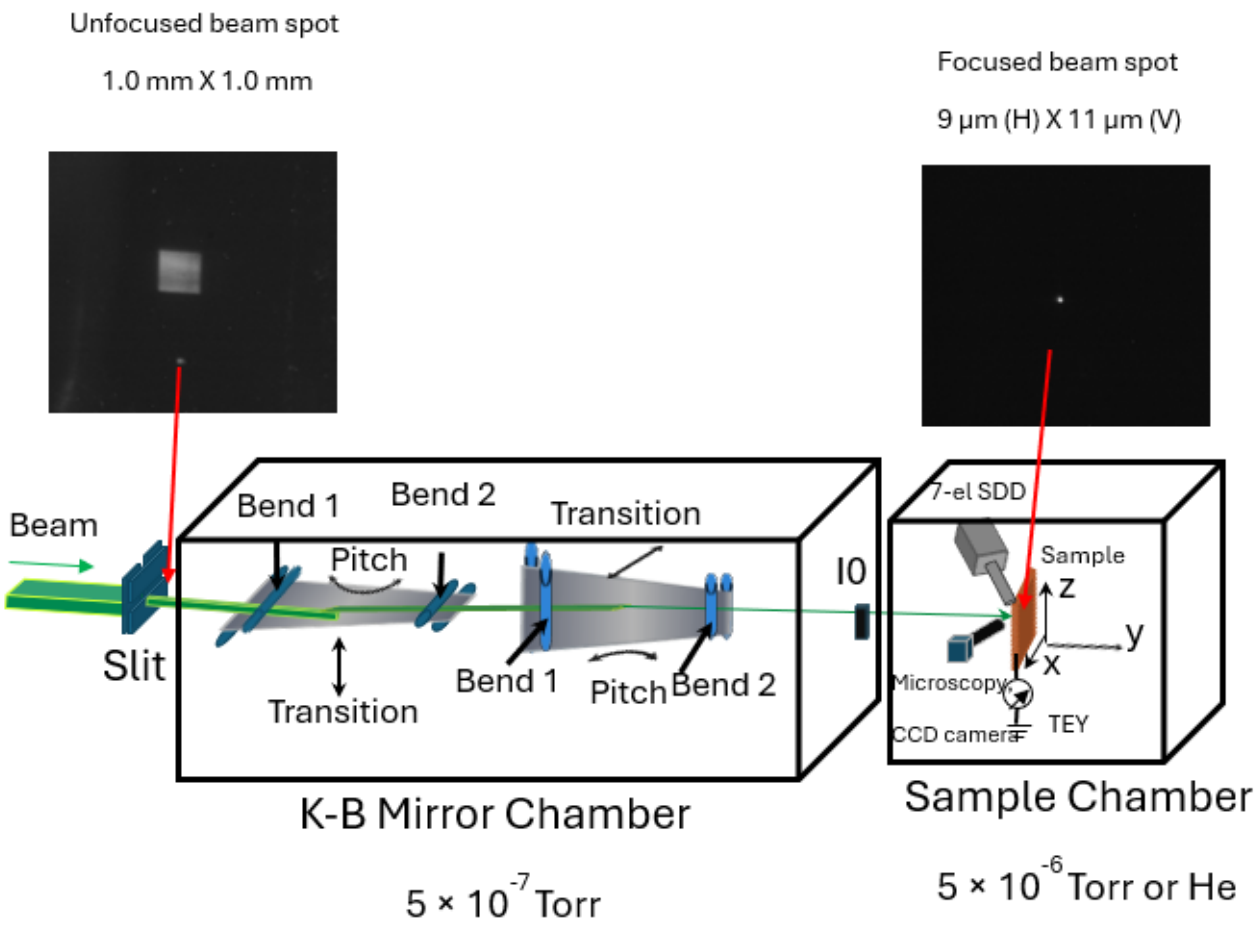
Loading Samples into the Microprobe Endstation

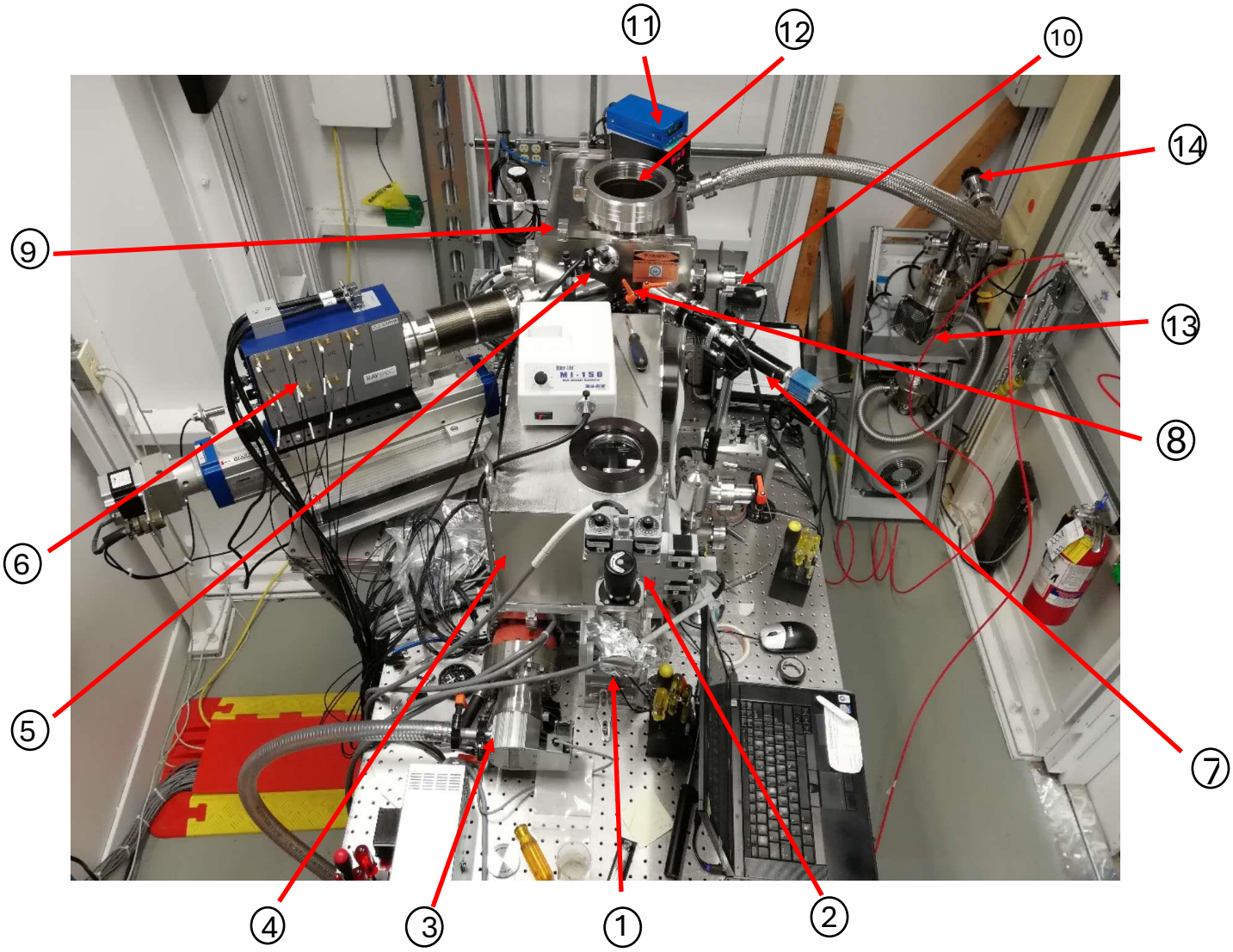
Sketch of microprobe system



X and Z range: ±12

Y range: -5 to 12

Description of microprobe system

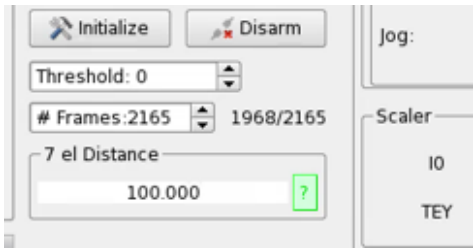


1. Beam entrance port	2. JJ slit.	3. Pump system for K-B mirror chamber.	4. K-B mirror chamber.	5. Lamp for illuminating sample.
6. 7-element SDD detector (RAYSPEC Ltd.). (movement range 40 mm – 190 mm)	7. Microscope and camera.	8. Mini ion chamber I0.	9. Sample chamber.	10. Wire connector port for TEY signal and biasing.
11. Sample chamber vacuum gauges (CCG and TCG).	12. Door for loading sample.	13. Pump cart for sample chamber.	14. Pump cart valve.	

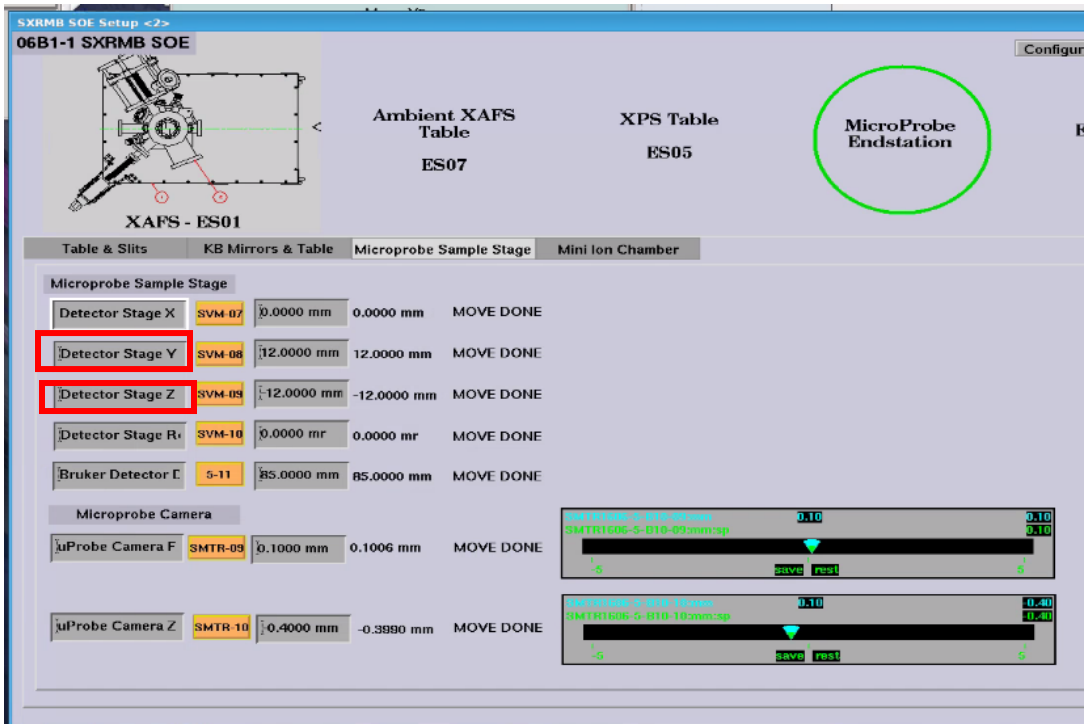
Loading a Sample Plate into the Sample Chamber

1. Turn the beam off using the Acquaman software by clicking on the “Beam Off” button.

2. Move 7-el detector to 100 mm.



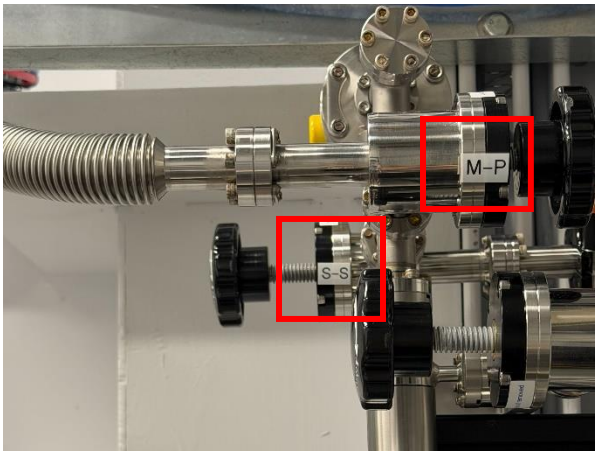
3. Use the laptop on the MP endstation, select microprobe endstation and under microprobe sample stage change the Z to -12 mm and Y to 12 mm.



4. Close the valve on pump cart (the black knob, turn clockwise to close).

5. Turn the pumping switch to Ø on the pump cart panel to stop pumping.

6. Switch the valves: Close the solid-state (SS) valve and open the microprobe (MP) valve.

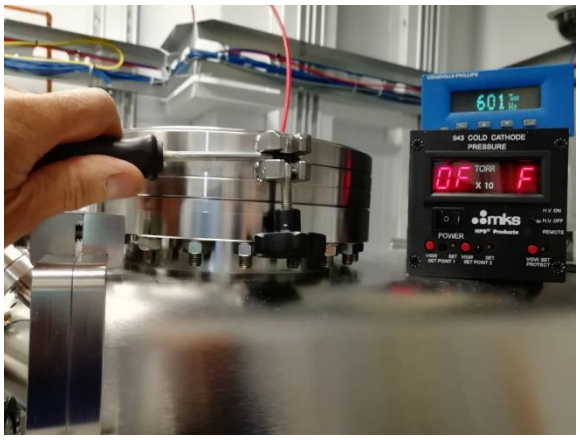


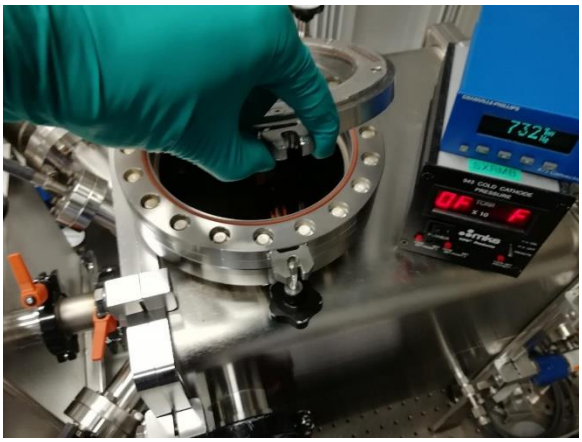
7. Loosen and unlatch the knob for the sample chamber door. (**This is very important!!**)

8. Start the auto-vent script from the main acquisition computer by double-clicking the shortcut icon:

9. Select option: “2) Vent” by typing the number “2” and pressing the Enter/Return key. Patiently wait for the chamber to vent to atmospheric pressure. This takes about **20 minutes**.

10. When the pressure reaches 740 Torr, the venting automatically stops. Then, open the sample chamber door using a screwdriver to help break the seal and hold onto the door with your left hand.





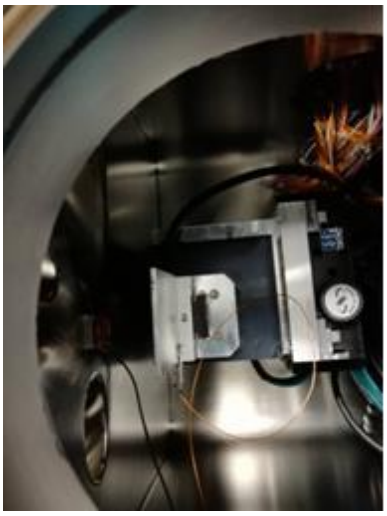
11. Take out the sample holder with your right hand and slowly close the door with your left hand. The gas is still flowing out from the door.

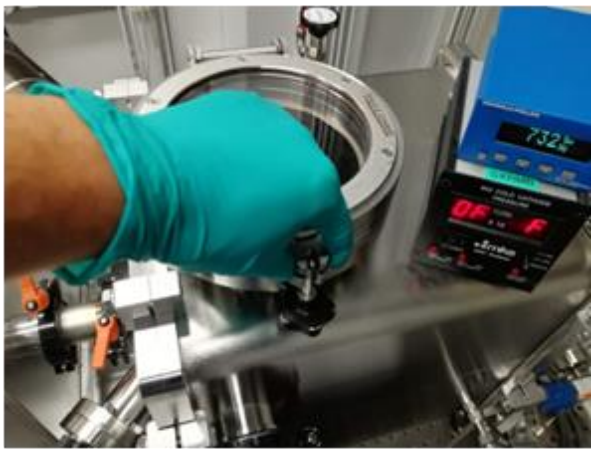
12. Take off the clip for the TEY signal wire and leave it outside of the door.

13. Take the sample holder to prepare new samples (the marked area is where you can mount the samples).

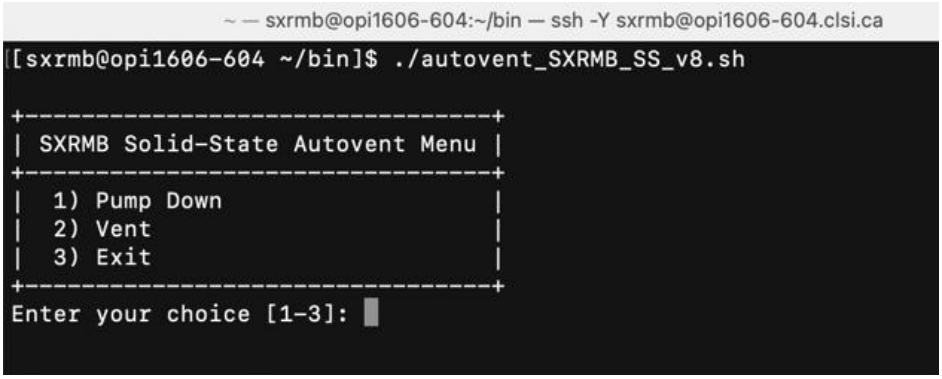
14. Clip the TEY signal wire on the sample holder with new samples.

15. Open the door with your left hand and put the sample holder on the magnetic base with your right hand (note: two magnets must be matched). Slowly close the door and lock the door of sample chamber door.

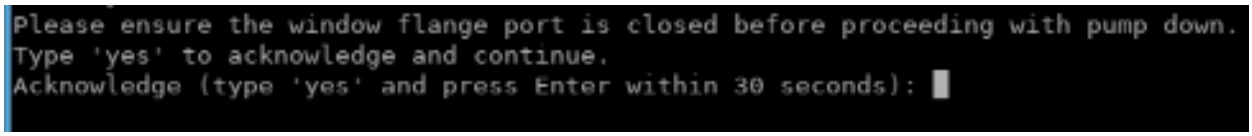




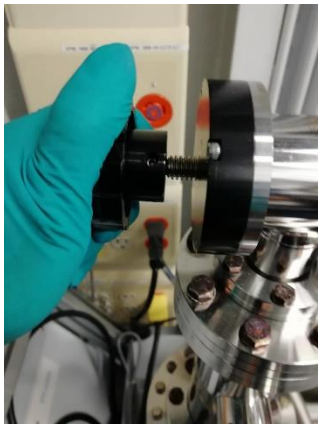
16. On the autovent script select option: “1) Pump Down” by typing the number “1” and pressing the Enter/Return key.



Then the software will prompt you to confirm that the loading chamber is closed. Type “yes” and press Enter.



17. **When the pressure on the sample chamber vacuum gauges reaches 3 Torr, slowly** open the valve of pump cart (the black knob).



18. Turn the pumping switch to 1 on the pump cart panel to start pumping.

Last Updated: April 29, 2026