

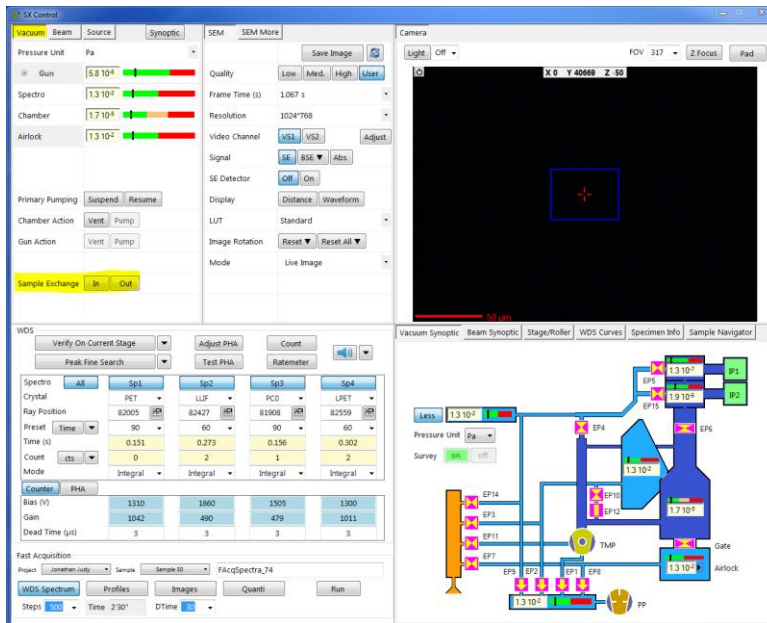
EPMA Sample Exchange.

Disclaimer:

Failure to follow these steps will cause severe damage to vacuum systems, windows and field emitter and will be considered negligence from the user.

Note: You must wear gloves before handling samples and any sample holder.

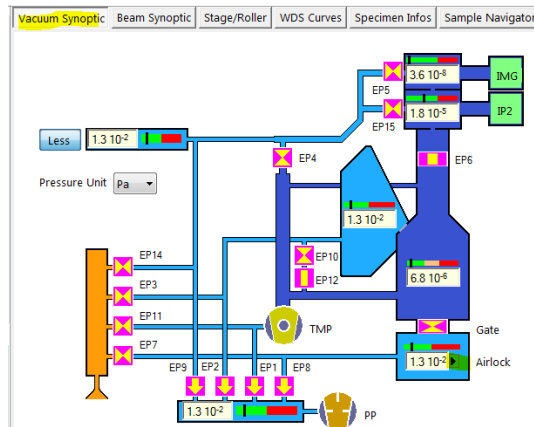
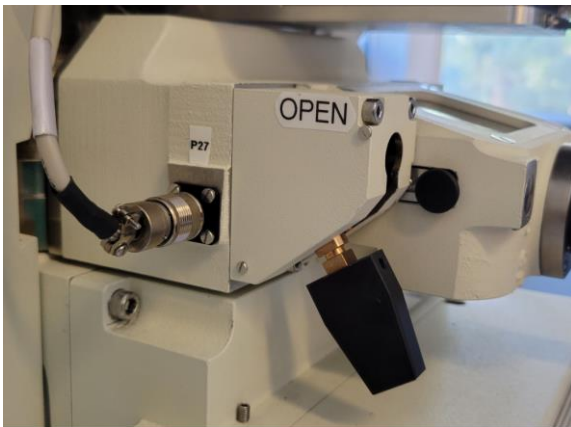
On Sx Control press Vacuum tab to access Sample Exchange In/Out.



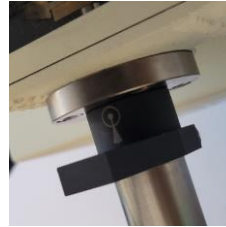
1.0 Sample In:

Ensure Airlock is vented. If not, got to *Vacuum Synoptic*, right click over *Airlock* diagram and select *Vent Airlock*.

Warning! (Gate valve should be closed before venting Airlock, black lever down position)



1.1 Open the Airlock chamber and insert the cassette into the holder and push until it clicks. Close the Airlock. **Warning:** *Unused set screws in the sample holder will fall down into the stage. Make sure they are removed before loading.*

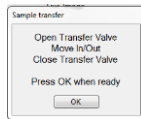


1.2 Spin the collar to the “In” position. Arrow pointing in.

1.3 Press Sample Exchange **In** on the Vacuum Tab.

A window will appear asking if the airlock is ready to be pumped (closed). Press **OK**.

The system will pump down the airlock and prompt the window below when ready.



Do not press OK until you follow the steps below:

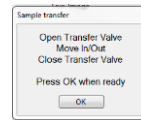
1.3.1 Wait for Airlock Vacuum to reach **1.3E-2Pa**.

1.3.2 Open gate valve (press in and up).

1.3.3 Insert sample by pushing in black lever with both hands then remove back.

1.3.4 Close gate valve. (Turn right and down)

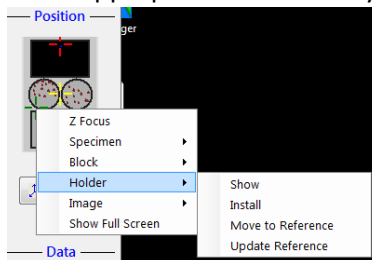
1.3.5 Wait for the vacuum chamber to reach 1E-4Pa. (In the meantime proceed to 1.4)



1.3.5 Press **Ok** on the sample exchange window.

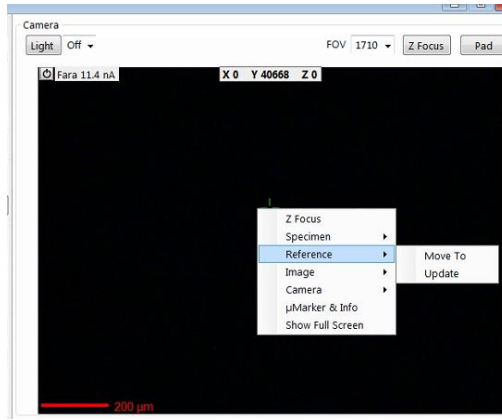
Warning: *Before opening the gate valve ensure the Vacuum on the airlock is 1.3E-2Pa. After inserting the sample and closing the gate valve, ensure the chamber vacuum is below 1.0E-4Pa before pressing Ok. Samples that outgas will require a wait of 5 or more minutes for the vacuum levels to reach these values. This will prevent degrading the field emitter and reduce contamination in the chamber and column.*

1.4 After the sample is inserted, install the appropriate holder and your new block (1”piece) by right

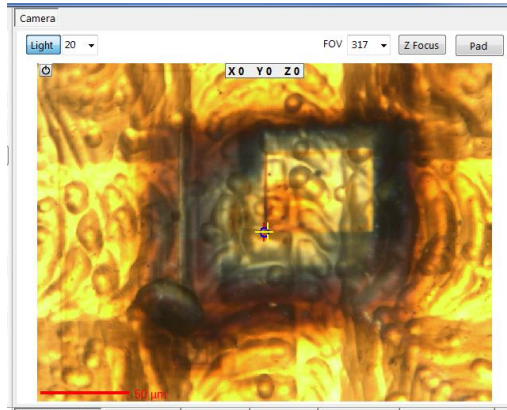


clicking over the *Position* window.

1.5 Hover over the optical image window, right click and press *reference / move to*.




1.6 Align the cross arrow with the optical screen and ensure image is in focus. Right click and

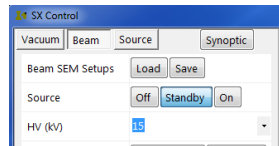


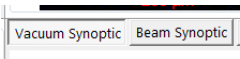
select: *Reference / Update.*

2.0 Sample Out:

If you are finished with the instrument, *Cut* the beam, turn off camera *Light* and set Scanning *Off*. Set

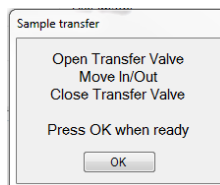
current to C2 = 3500  . Then Go to Beam and press Standby.



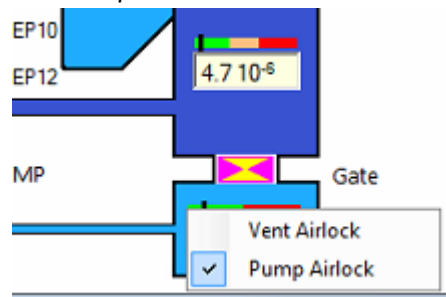
2.1 Select *Vacuum Synoptic*  , to display vacuum values.

2.1.1 Go to the *Vacuum* tab, select *Sample exchange Out*. (This will move the sample to the unload position and pump down the airlock).

2.2 The Window below will appear.



- 2.2.1 Open the Gate Valve. (Push in and Up)
- 2.2.2 Move the black collar so the arrow is pointing out.
- 2.2.3 Insert the arm into the chamber until it stops.
- 2.2.4 Retract the arm. (The cassette with your samples should be visible in the Airlock)
- 2.2.5 Close the Gate Valve.(Turn right and down) (Wait 30s before proceeding)
- 2.2.6 Press *OK* on the Load/Unload window. (The Airlock will automatically vent wait 30s before opening.)
- 2.2.7 If you are done with the system, remove your sample and set screws from the cassette, place the cassette back into the Airlock, hover over the airlock with the mouse, right click and select: *Pump Airlock*.



Warning: Make sure Airlock door is closed before proceeding. Remove any set screws used to hold your samples. Set screws left in the cassette will fall inside chamber jamming the stage and causing expensive repairs.

3.0 Instrument Standby Mode

Make sure C2 is set to 3500, Source is placed in Standby and optical microscope light is turned off.