

FOCUSED ION BEAM SYSTEM: HITACHI FB-2100

SPECIMEN LOADING PROCEDURE

SEM STAGE

Preparation:

1. Prepare bulk sample:
 - a. Always wear gloves
 - b. Do not touch sample stubs or stage base with hands
 - c. Ensure highest point of sample barely fits in height gauge.
2. Ensure **S.C. AIR LOCK VALVE** is closed.
3. Ensure stage is at the **home** position.

To load a specimen into the sample chamber:

1. Press **AIR** to vent the sample exchange chamber to atmosphere.
2. When the **S.E.C. VACUUM AIR** light is lit red and the chamber falls open, thread sample holder onto rod.
3. Ensure rod is fully retracted (listen for dull click).
4. Ensure front panel vacuum control is set to **S.E.C.**
5. Hold the sample exchange chamber closed and press **EVAC** button.
6. Wait until the **S.E.C. VACUUM HIGH** light is lit green.
7. Open **MV-1** gate valve.
8. Extend rod and sample base into sample chamber, slide it onto the stage.
9. Unthread sample rod from sample base and retract rod fully (listen for dull click).
10. Close **MV-1** gate valve.

To remove a specimen from the sample chamber:

1. Ensure **S.E.C. VACUUM HIGH** light is lit green.
2. Open **MV-1** gate valve.
3. Extend rod into sample chamber, thread it into sample base.
4. Retract rod and specimen into sample exchange chamber. Ensure rod is fully retracted (listen for a dull click).
5. Close **MV-1** gate valve.
6. Set front panel vacuum control to **S.E.C.**
7. Press **AIR** to vent the sample exchange chamber to atmosphere.
8. When the **S.E.C. VACUUM AIR** light is lit red and the chamber falls open, remove sample base from rod by unscrewing rod.
9. If a new sample is not to be loaded immediately, hold the S.E.C closed with one hand, and press **EVAC** button.

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SPECIMEN LOADING PROCEDURE

TEM STAGE

1. Ensure **S.C. AIR LOCK VALVE** is closed.
2. If TEM holder is loaded in stage:
 - a. Ensure TEM holder is in the **EM** position and the selector knob cover is retracted.
 - b. Pull TEM holder out until it stops.
 - c. Rotate TEM holder 15° clockwise.
 - d. Pull TEM holder out until it stops.
 - e. At this point, be very careful with the amount of force you are exerting to keep the TEM holder from being pulled back into the stage. Rotate TEM holder 45° counter clockwise. Be careful not to pull it out as the pin becomes visible. Release TEM holder, it will stay in place.
 - f. Ensure front panel vacuum control is set to **S.E.C.**
 - g. Press **AIR** to vent the stage to atmosphere.
 - h. When the **S.E.C. VACUUM AIR** light is lit red, pull the TEM holder out of the stage.
 - i. Load sample grid onto holder
 - j. Insert TEM holder into stage until pin is engaged in slot.
 - k. Ensure front panel vacuum control is set to **S.E.C.**
 - l. Press **EVAC** to evacuate the stage.
 - m. When the **S.E.C. VACUUM HIGH** light is green, rotate the TEM holder 45° clockwise.
 - n. Allow the vacuum to draw in the TEM holder into stage until it stops
 - o. Rotate TEM holder 15° counter clockwise
 - p. Allow vacuum to draw the holder into the stage until it stops.
3. If blank holder is in stage:
 - a. Ensure front panel vacuum control is set to **S.E.C**
 - b. Press **AIR** to vent the stage to atmosphere.
 - c. When the **S.E.C. VACUUM AIR** light is lit red, pull the blank holder out of the stage.
 - d. Follow steps (i) to (p) above.