HIGH RESOLUTION FIELD EMISSION
SCANNING ELECTRON MICROSCOPE: HITACHI S-4800

SPECIMEN LOADING PROCEDURE

1. Ensure EDX and annular backscatter detector is fully retracted.

2. Ensure stage is at the home position; the **HOME** button at the top-right corner of the software interface will have a solid green indicator next to it. If not, press **HOME**. The light next to it will flash green while stage goes to the home position, and will go solid when it is complete.

3. Ensure **Z** to 8 mm and **T** to 0 degrees, on the microscope body.

4. Press **AIR** button on top of sample exchange chamber and wait until specimen exchange chamber falls open. The air button will flash orange while the chamber vents to air and will go solid orange when venting to air is complete.

5. Put on gloves.

6. Mount your stub to the specimen holder. Adjust specimen height so the highest point of the sample barely fits under the height gauge.

7. Twist sample rod to **Unlock**, pull open sample exchange chamber, fit specimen holder to the prongs on the stage mount, and twist sample rod to **Lock**.

8. Hold sample exchange chamber closed and press **EVAC** button. Wait a few seconds before releasing the chamber. The **EVAC** button will flash green while evacuating the sample exchange chamber and will go solid green when complete, followed by a beep.

9. Remove gloves.

10. Press **OPEN** to open the gate valve between sample exchange chamber and sample chamber. The **OPEN** button will flash orange, and go solid orange when the valve opens, followed by a beep.

11. Extend the specimen holder into the sample chamber and mount the holder onto the stage. Twist the knob to **unlock** and retract the specimen holder rod until it clicks.

12. Press **CLOSE**. It will flash green while it closes and go solid green when it is closed, followed by a beep.

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SPECIMEN EXCHANGE PROCEDURE

1. Press **HOME** button at the top-right corner of the software interface. The light next to it will flash green while stage goes to the home position, and then to solid.

2. While the stage is moving to the home position (green light flashing), you can turn HV **OFF** at top-left corner of software interface.

3. On the microscope body, set **Z** to 8 mm and **T** to 0 degrees.

4. Press **OPEN** to open the gate valve between sample exchange chamber and sample chamber. The **OPEN** button will flash orange, and go solid orange when the valve opens, followed by a beep.

5. Ensure the specimen rod is set to **Unlock**, extend the specimen rod into the sample chamber until the rod connects with the sample holder. Twist the knob from **Unlock** to **Lock**. Retract the holder into the sample exchange chamber until it clicks.

6. Press **CLOSE**. It will flash green while the gate valve closes and go solid green when it is closed, followed by a beep.

7. Press **AIR** button on top of sample exchange chamber and wait until specimen exchange chamber falls open. The air button will flash orange while the chamber vents to air and will go solid orange when venting to air is complete, then beep.

8. Put on gloves.

9. Pull open sample exchange chamber and swap specimen holders. Adjust new specimen height so the highest point of the sample barely fits under the height gauge.

10. Hold sample exchange chamber closed and press **EVAC** button. Wait a few seconds before releasing the chamber. The **EVAC** button will flash green while evacuating the sample exchange chamber and will go solid green when complete, then beep.

11. Remove gloves.

12. Press **OPEN** to open the gate valve between sample exchange chamber and sample chamber. The **OPEN** button will flash orange, and go solid orange when the valve opens, followed by a beep.

13. Push the specimen holder into the chamber using one finger and mount the holder onto the stage. Twist the knob to **unlock** and retract the specimen holder rod until it clicks.

14. Press **CLOSE**. It will flash green while it closes and go solid green when it is closed, followed by a beep.