JEOL 7000F BASIC OPERATING INSTRUCTIONS

Note: This is a very minimal operation checklist and does not replace the other reference manuals.

1. Verify Instrument Condition:
   a. Start JEOL PC-SEM 7000 software, if not running.
   b. Start IR Chamberscope; shortcut is <CNTL-ALT-I>.
   c. Verify vacuum is 9.63E-005 Pa (this is lowest readout will indicate)

2. Prepare and insert sample, see JEOL 7000F Specimen Insertion (Load Lock Operation) Procedure Manual.

3. Wait for Vacuum to be < 5.00E-004.

4. Open the Column dialog:
   a. Set desired Accelerating Voltage – Use 15 kV unless you know you want a different voltage
   b. Verify correct OL Aperture is selected
   c. Verify Mode 3 selected
   d. Verify Column Mode - SEM
   e. Pre-set desired Probe Current – Select Medium – 7 range unless you know what setting you need
   f. Verify Scan Rotation OFF
   g. Verify DFC OFF

5. Click Z-FOCUS mode button

6. Click the WD indication in the Lower Right Hand Corner and select the desired WD distance from the dialog.
   Warning: If you have not properly entered the Offset in the Specimen Exchange dialog you could cause severe damage to the instrument by causing the sample to crash into the objective lens pole piece.

7. If you are sure you did the above, click OK to the Warning Dialog.
   Monitor the stage motion with the IR chamberscope.
   Note: you can abort stage motion with the <ESC> key.
   When motion is completed Z Position indicator should read WD+OFFSET.
   Focus value will also now be WD selected.

8. Click HT button. It should be dark green before pressing it and it will change to bright green and you should hear the column isolation valve open.

9. Set or read probe current using PCD, if desired.

10. Locate your sample at minimum magnification using joystick or mouse right click (right click centers point clicked in field of view). Note: at minimum magnification the image is quite distorted (“pin-cushion” distortion).

11. Coarse Focus on sample (knob on knob pad). Progressively increase magnification and locate finer and finer features. The most ideal features have edges 360 degrees around and are not exhibiting any charging...
artifacts. Remember, at this point, the focus control is actually moving stage Z rather than adjusting objective lens strength, therefore, you need to monitor the IR chamberscope.

12. Deselect **Z-Focus** mode

13. Adjust for best Focus (now with the objective lens)

14. Adjust BEAM ALIGN (using HT Wobbler)
   a. Press Align button
   b. **Beam Align** should be selected by default
   c. Press **HT Wobbler** button and adjust amplitude, as needed.
   d. Adjust **X and Y** (beam align) knobs on Control Panel to eliminate image shift.
   e. Press **HT Wobbler** button to turn off wobbler.
   f. Close alignment panel

15. Adjust **X, Y** (stigmators) and Focus for best image

16. Press **Photo** to record slow scan image