**JSM-7001F Easy Manual Ver.1.00**

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Makoto Ishikawa

**1. Checks before use**

1-1. Is measurement software (PC-SEM) running? If not please start up PC-SEM. The ID and password are Guest and SEMUser.

1-2. When measurement software is Japanese menu, choose Exit in File menu to close the software in Japanese. Choose to exit in a further opening window. Then start PC-SEM (English) in the above procedure.

1-3. Check whether the "EVAC" and "EXCH POSN" lamps at the side of the introduction portare on.

1-4. Turn ON the switch of the IR camera.You can check the inside of the chamber through the window which is opened navigator → camera. Make sure that there are no detectors or specimenin the chamber.

1-5. The pressure of the chamber is 5 x 10 -3 Pa or less.

1-6. The conceptual diagram on the screen is dark gray as a whole. Be especially careful when the front room is light gray.

**CAUTIONS:**　If the status of the device is different from the above list, please do not use the instrumentand contact the person in charge of the device.

**2. Introduction of the sample and observation**

2-1. Fix the sample on the sample table. The height of sample surface should be the same height of the edge of sample holder. When you want to use EBSD, you should use12.5 mm holder to prevent the crash to the objective lens.

2-2. Press "Spec. Exchange" button on screen. Then the stage moves to the sample exchange position.

2-2. Open the clamp beside the introduction port and press VENT button on the screen.

2-3. Open the door of front chamber and set the sampleholder. And close the door.

2-4. Press the EVAC button on the screen. Wait the front chamber becomes dark gray and the shutter opens.

2-5. Down the rod until the gray plastic parts is pushed down. Push the rod straight with your palm without giving any momentum. Finally, the metal part of the rod is entirely hidden. When the sample holder reach the correct position, the holder selection window is opened on the screen.

**CAUTIONS:**　**This process causes too much troubles.** Be careful! At the introduction, you must confirm the gray plastic parts is pushed before the rod pushing. At the pulling out, you don’t bent the rod until the gray plastic parts jumps out.

2-6. Pull out the rod straightly until the gray plastic parts jumps out. Then, the rod is raised.

2-7. Select the type of sample holder inserted in the sample holder selection window and enter the height if necessary.

2-8. Press “Home position” button on the screen. Then the sample moves to the observation position (WD = 10 to 12 mm).

2-9. Select accelerating voltage and trading company current.

- The acceleration voltage is 10 to 15 kV for metal.

- Weak materials and samples feared to be charged 3-5 kV

- The irradiation current is 8,

2-10. Right click on the WD in the bottom of the image and select 10 mm.

2-11. Press ON button of observation to emit an electron beam.

2-12. Press ACB to automatically adjust the brightness of the image.

2-13. Use the FORCUS, MAG, X, Y knobs, movement button of the stage to observe the sample as you like.

2-14. To record the images, press the camera icon above the image on the screen. Enter the storage location and file name in the opened window.

**3. Take off your sample**

3-1. Press the “OFF” button of observation to cut off the electron beam. Then press the “Exchange position” button to move the sample holder to the position for exchanging.

3-2. Operate the rod to move the sample to the front chamber.

3-3. Open the clamp and press VENT button on the screen. The air is introduced into the front chamber.

3-4. Open the door of front chamber and take your sample off.

3-5. If you continue the observation with next sample, set the sample holder with next samples.

3-6. Close the door. At this time, It’s nice to check the O-ring on the door.

3-7. Push the EVAC to vacuum the front chamber.

3-8. Remove the sample from the sample stage. Wipe the sample stand gently with ethanol and Kim wiper.

**4. Finish**

4-1. Set the probe current to 8.

4-2. When EDS or EBSD is used, check if the detector is out.

4-3. Turn off the lamp of IR camera.

4-4. Turn OFF only the power switch of the monitor. Do not shut down software and PC.

4-5. Clean up the surroundings of the SEM.

4-6. Fill in the log book.