

OPERATION OF JEOL JSM-T200

(January 1998 - Version 2.1)

STARTUP

1. Cooling water on
2. POWER switch on
3. MAGNIFICATION displays a magnification readout

👉 **SIGN IN TO LOG BOOK** 👈

SPECIMEN EXCHANGE

1. **FILAMENT** control fully CCW
2. **ACCELERATING VOLTAGE OFF** (Button **OUT**)
3. Toggle **VENT** vacuum control switch
4. Pull out specimen stage. Must be at 0 degrees tilt
5. Mount/exchange specimen
6. Insert specimen stage. Must be at 0 degree tilt
7. Toggle **PUMP DOWN** vacuum switch
8. **MAGNIFICATION** displays a magnification readout

IMAGE OBSERVATION

1. Initial settings:
 - a) **WD** selector to 20 (or 8 or 48)
 - b) **SEI** switch depressed
 - c) **FILAMENT** control fully CCW
 - d) **ACCELERATING VOLTAGE** to desired kV
 - e) **SPOT SIZE** to 11 o'clock
 - f) **CONTRAST**, **BRIGHTNESS**, and **FOCUS** panel **AUTO/MAN** button to **MAN**
 - g) **MAGNIFICATION** control to 35x
2. **ACCELERATING VOLTAGE** on
3. **CONTRAST** control set so that the checker meter reads ~**0.20** when the **POSITION** selector is at **21**
4. **LSP** and **EXP** depressed. If line does not appear, turn **BRIGHTNESS** control CW until line appears
5. **CHECKER** to **#4**. While watching **CHECKER** meter, increase **FILAMENT** control until initial rise on meter.
6. Continue increasing **FILAMENT** control until waveform plateaus.
7. Depress **PIC/TV** twice to view an image on the monitor
8. Depress **PHOTO** to reduce scan area and improve image quality

PHOTOGRAPHY

1. Focus and correct astigmatism at a magnification at least 2 to 4 times the magnification you want
2. Decrease magnification to the magnification you want, depress **PHOTO** to compose photograph image field
3. **PIC/TV** and **EXP** depressed
4. Adjust **CONTRAST** and **BRIGHTNESS** controls
5. Close camera over monitor
6. Check f/stop: **f/5.6** for Polaroid 55; **f/16** for Polaroid 52
7. Insert film. Set **FILM COUNTER**.
8. Depress exposure button on top of camera - **EXPOSURE** lights up
9. When **EXPOSURE** light goes out, remove film, and process
10. Move camera away from monitor. Depress **PIC** to continue viewing image

BACKSCATTERED IMAGING

→ Due to decreased S/N ratio of BEI signal you will possibly need to:

- increase **ACCELERATING VOLTAGE**
- Increase **SPOT SIZE**
- Decrease **WD** (8 mm WD will not work)
- Tilt specimen towards to detector
- Use slow scan mode for improved viewing (**PIC/TV**)

1. Locate area of interest in **SEI** mode
2. Depress and release **SEI/BEI** switch
3. Increase **CONTRAST** and **BRIGHTNESS** controls
4. Increase **SPOT SIZE** (CW) if needed and adjust **CONTRAST** and **BRIGHTNESS** controls
5. Focus and stigmatize in **SEI** mode

NORMAL SHUT DOWN

1. **FILAMENT** fully CCW
2. **ACCELERATING VOLTAGE OFF** (Button **OUT**)
3. Specimen out, and column evacuated
4. **MAGNIFICATION** fully CW - readout displays **00000**
5. 🖱️ **SIGN OUT OF LOG BOOK** 🖱️
6. Lights off

FULL SHUT DOWN

- 🖱️ Full shut down is to be done ONLY in case of:
- a. Interruption of building utility services (Electrical or Water)
 - b. Vacuum system failure
 - c. Instruction of EMF Staff

1. Push red **SHUTDOWN** button lower left panel - Lights on right panel will go out and scope will go quite
2. Switch breaker box to **OFF**
3. Cooling water recirculator manual switch to **OFF**

TURNING SCOPE ON AFTER FULL SHUT DOWN

🖱️ To be done ONLY after correction of the reason for the full shut down

1. Breaker box to **ON**
2. Cooling water recirculator manual switch to **ON**
3. Push Black **START UP** button lower left panel - pumps will start, some lights will come on

🖱️ After 30-45 mins, the **MAGNIFICATION** display will read **00000** (Left upper panel) should be illuminated indicating the scope is functioning.