

1200EX Electron Microscope

This is a transmission electron microscope max at 120 kV.

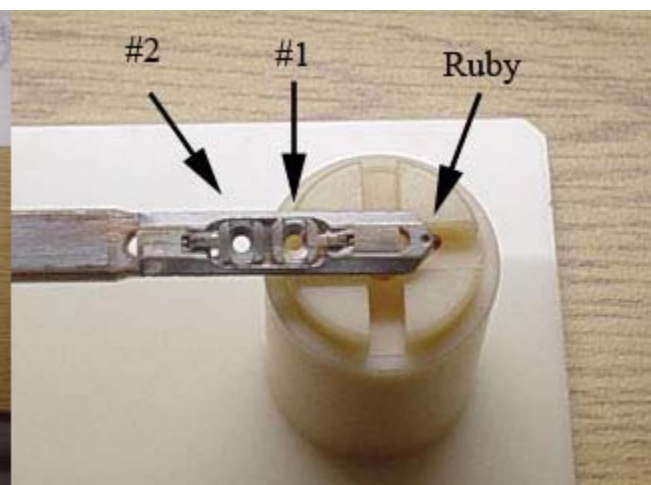
OPERATING INSTRUCTIONS FOR JEOL 1200EX

Check for the following:

1. **Green Ready** lamp is lit.
2. **Beam Current** reads 000 or 046. (If **Beam Current** is blank, open upper left panel. Move **lens power supply** switch to **On** and **accelerating voltage** switch to **operate**).
3. Accelerating Voltage is at 80.0 kV
4. Mag is at 5,000x
5. Photo number on the phot log corresponds with the photo number on the display screen.

Load Sample:

1. Load samples in sample holder (#1 is closest to ruby).



2. Align sample holder with insertion hole. The top of the sample holder will be facing the operator.
3. Insert fully without turning.
4. Firmly press the sample holder toward column until you hear the vacuum pump engage AND the **red lamp lights up** next to insertion hole.
5. WAIT until red light goes OUT and pump recycles.
6. Turn 1/4 turn clockwise and control sample holder speed as it is pulled into column by the existing vacuum.
- (Rotating Holder: Plug into **H1** pin connector).
7. Dial in sample position 1 or 2.
8. Turn up **CRT** intensity.
9. Depress **mag 2** (mag = 5,000).
10. Set **accelerating voltage** to 80 kV.
11. Depress **HT button**. Wait until **Beam Current** stabilizes @ 046. (If a different working kV is desired, call a member of the facility.)
12. Slowly increase **filament** knob to the stop.
13. Condense the beam with **brightness** knob (counter-clockwise).
14. Center beam with **SHIFT X/Y** knobs if necessary.
15. Spread the beam using **brightness** knob.
16. Focus the binoculars on the pointer (black dot). Small screen must be in lowered position.
17. Focus the image using the **image x wobbler**.
18. Adjust the **Z axis**.

Z Axis Adjustment:

1. **Mag** at 5,000, image in **focus**.
2. Place a small, easily identifiable object at the screen center.
3. Disengage the **goniometer stage drive**.
4. Rotate **knurled ring** on **goniometer** counterclockwise 15°.
5. Observe the movement of the selected object.
6. Using the **small knurled knob** on the **goniometer**, bring the selected object back to screen center.
7. Return **goniometer** tilt to 0°.
8. Center selected object with **stage controls**.
9. **Focus** image.
10. Repeat steps 4 thru 9. (When the selected object remains at screen center during tilting, the Z axis is properly set).
11. Engage the **goniometer stage drive**.

Photography:

1. Select the desired field and magnification, focus the image.
2. Select either full screen or small screen exposure meter.
3. Adjust **brightness knob** to set **EXP TIME** to 2.8 seconds.
4. Depress **photo button** (wait until button lights up).
5. Depress **photo button** again (when exposure is complete, the image will reappear on the screen).
6. Record all pertinent information on the **Photo Record Sheet**.

Remove Sample:

1. Turn **brightness knob clockwise** until screen is dim.
2. Set **filament** to **zero**.
3. Set **goniometer** tilt angle to 0°. (**Rotating Holder:** Unplug **H1** pin connector).
4. Pull sample holder straight out to the stop.
5. Turn 1/4 turn counterclockwise.
6. Pull straight out to remove from column.

Standby:

1. Turn **brightness knob clockwise** until screen is dim.
2. **Filament** knob set to **zero**.
3. Remove sample.
4. Set **accelerating voltage** to 80.0 KV.
5. Depress **HT button** (beam current reads 000).
6. Turn down **panel light** and **CRT intensity**.
7. Turn off **room light**.