Daily ALIGNMENTS for JEM-2200FS

1 Fill LN2 wait for 15min, load specimen holder and insert it on column, wait right to get good vacuum.
2 Energy Shift Filter OFF, Slit in "OUT" Position.
3 Open V1, Press Beam Button on Left Hand Panel.
4 Degauss from "Dialogue/Filter Control/Degauss"

5 Press STD FOCUS button in Right Panel. Focus image at Mag 10KX with Z control.
- Perform Voltage center, turn ON HT Wobb "Maintenance-Wobbler HT" then use "Maintenance-Alignment-CLA" DEF/STIGX/Y knobs minimize the image "particle" movement.

6 Gun - Condenser alignment. Beam at crossover, MAG at 10KX, TEM α3.
   a. Spot size 1 center beam with GUN SHIFTS use "Maintenance-Alignment-GUN" SHIFTS X/Y knobs.
   b. Spot size 5 center beam with CL (Beam) SHIFTS use "Maintenance-Alignment-CLA" SHIFTS X/Y knobs.
   c. Repeat steps a & b right beam still in center.

7 Use Anode Wobb "Maintenance-Wobbler ANODE", select GUN tilt from "Maintenance-Alignment-GUN", Use DEF/STIG X/Y knobs to get uniform image.

8 Repeat steps 6 to 7 right beam in center with uniform filament image.

9 Insert CL aperture adjust X-Y direction to get uniform spread beam.

10 Adjust COND STIG "Maintenance-Alignment-CL STIG" use DEF/STIG X/Y knobs to get round small beam.

11 Perform Voltage center, turn ON HT Wobb "Maintenance-Wobbler HT" then use "Maintenance-Alignment-CLA" DEF/STIGX/Y knobs minimize the image "particle" movement.

12 Perform TILT interlock adjustment for the COND deflectors.
   a. MAG set at 10kx, spots 1-3, obtains a crossover spot with the BRIGHTNESS control and center the Spot with the COND SHIFTS use "Maintenance-Alignment-CLA" SHIFTS X/Y knobs.
   b. Turn ON Tilt X WOBB by pressing "Maintenance-Alignment-Wobbler Tilt X" beam will start move.
   c. Adjust "Maintenance-Alignment-Compensator Tilt" DEF/STIG X/Y knobs in X direction so that the separated spots overlap.
   d. Turn OFF Tilt X WOBB by pressing "Maintenance-Alignment-Wobbler Tilt X"
   e. Turn ON Tilt Y WOBB "Maintenance-Alignment-Wobbler Tilt Y" beam will start move.
   f. Adjust "Maintenance-Alignment-Compensator Tilt" DEF/STIG X/Y knobs in Y direction so that the separated spots overlap.
   g. Center the spot with COND SHIFTS "Maintenance-Alignment-CLA" SHIFTS X/Y knobs.
   h. Perform rough Voltage center, turn ON "Maintenance-Wobbler HT" then use "Maintenance-Alignment-CLA" DEF/STIGX/Y knobs.

13 Perform the SHIFT interlock adjustment for the CL deflector.
   a. Depress SA DIFF button and set the camera length to 200cm. Manipulate the DIFF FOCUS so that he Diameter of the caustic spot is minimum. Assure that BRIGHTNESS knob is at maximum (CW) when
   b. Turn ON Shift X WOBB by pressing “Maintenance-Alignment-Wobbler Shift X” beam will start move.
   c. Adjust “Maintenance-Alignment-Compensator Shift” DEF/STIG X/Y knobs in X direction so that the separated spots overlap.
   d. Turn OFF Shift X WOBB by pressing “Maintenance-Alignment-Wobbler Shift X”
   e. Turn ON Shift Y WOBB “Maintenance-Alignment-Wobbler Shift Y” beam will start move.
   f. Adjust “Maintenance-Alignment-Compensator Shift” DEF/STIG X/Y knobs in Y direction so that the separated spots overlap.
   g. Back to MAG mode center the spot with COND SHIFTS “Maintenance-Alignment-CLA” SHIFTS X/Y knobs.

14 Repeat steps 11&12&13 right spot remain in center.

15 Image mode (Mag Mode and Spectrum button off) – center beam by with CL (Beam) SHIFTS use “Maintenance-Alignment-CLA” SHIFTS X/Y knobs.
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16 Spectrum mode (Spectrum Button On) - get specimen on beam watch a spectrum beam “tail beam”.

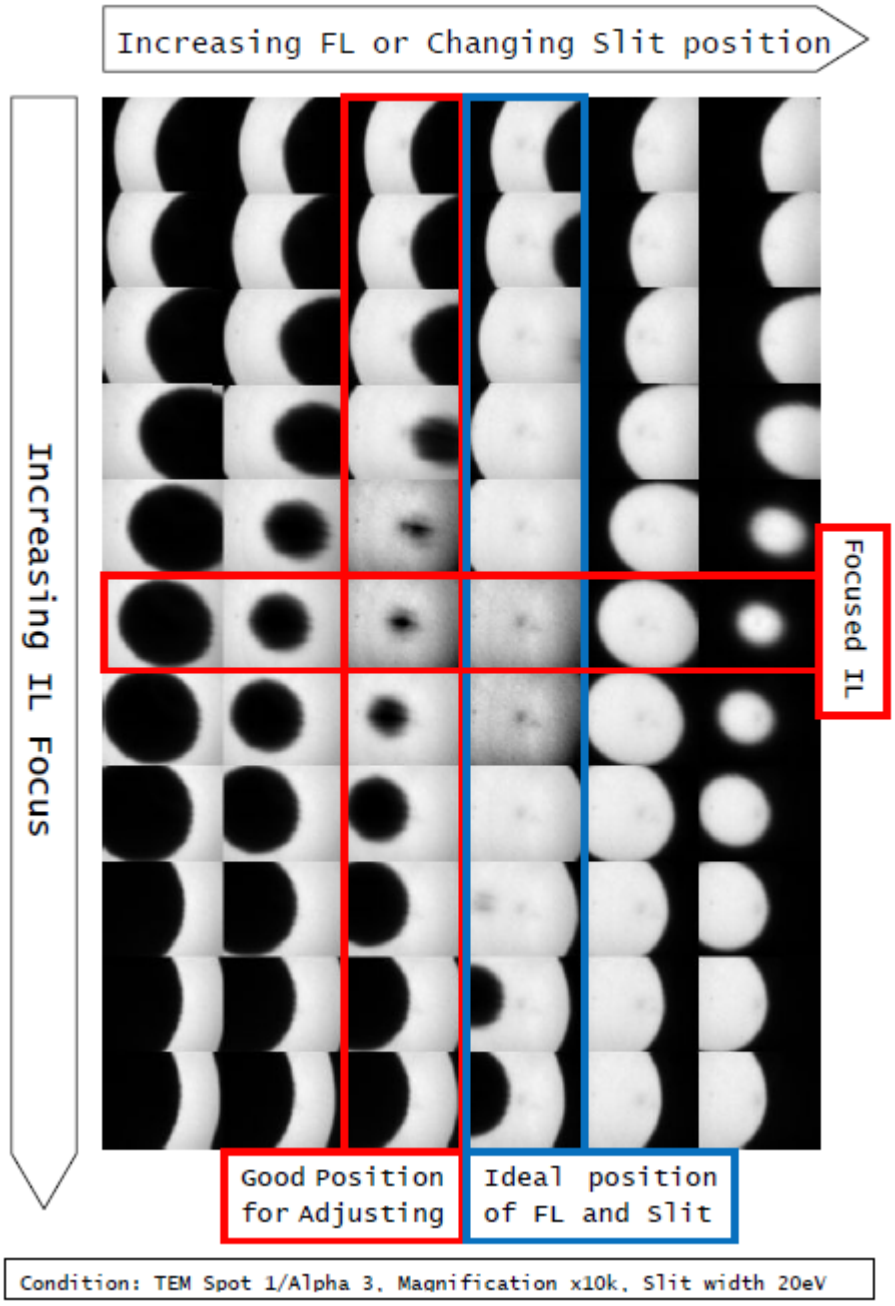
17 From Filter Control Window adjust Slit Width to 20 eV, Insert Slit IN – center beam by slit position Button in Filter Control Window.

18 Slit OUT – center beam by FL Knob (Left Hand Panel) and PLA use “Maintenance-Alignment-PLA” DEF X/Y knobs.

19 Repeat step 17 & 18.

20 Switch to image mode
   a. Check ISOCHROMATICITY (IL FOCUS) Move ISOCHROMATICITY Button in “Filter Control Window”, left and right to get minimum symmetrical dark spot around center
   b. If dark spot symmetrical around center but big use Slit POSITION button to minimize the dark spot
   c. If dark spot minimum and symmetrical off center use FLA with DEF X/Y knobs to center dark spot on center and CL (Beam) SHIFTS to center beam on center.

21 Once you find an area of interest you will need to recheck focus image by OBJ FOCUS FINE/COARSE, correct OBJECTIVE STIG “Maintenance-Alignment-OL STIG” use DEF/STIG X/Y knobs.



Condition: TEM Spot 1/Alpha 3, Magnification x10k, Slit width 20eV