TM4000/TM4000Plus Simple Manual

Front of TM4000

1. Starting The Instrument

(1) Turn on the earth leakage breaker on the back of the main unit.

(2) Turn on the power switch on the right side of the main unit to start the device.

(3) When the unit is turned on the Evacuation process will start automatically and the EVAC LED will blink BLUE.

If you want to load a sample, press the EVAC/AIR button. The AIR LED will then blink WHITE. Once the specimen chamber is at air, the AIR LED will be stop blinking and remain WHITE.

(4) Turn on the PC. Start the TM4000/TM4000Plus application by double-clicking the TM4000 programme shortcut. The TM4000 start screen will be displayed until the Graphical User Interface (GUI) is loaded.

2. Preparing Specimen

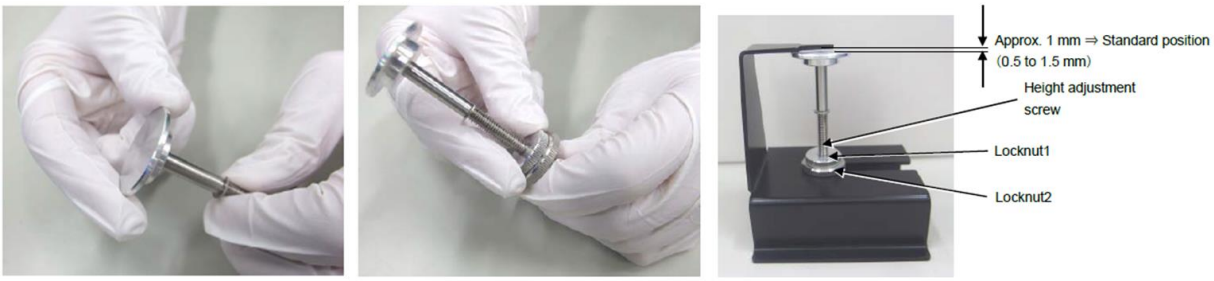
Bulk specimen (Conductive/Non-conductive)

(5) Put the conductive tape on the specimen stub and attach a specimen on it.

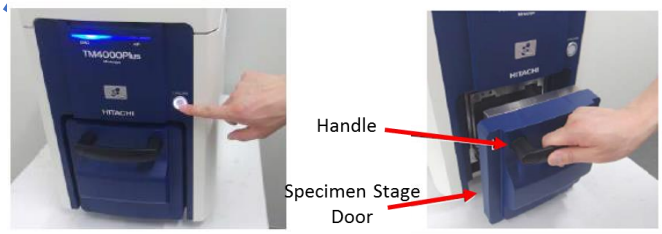
Water / Oil containing specimen

(5) When observing water containing specimens such as biological and botanical specimens, food items and so on, use a paste to stick a specimen on the stub.

(6) Attach the specimen stub to the specimen holder, and adjust its height using a height gauge so that the gap width becomes about 1 mm.



3. Loading the Specimen



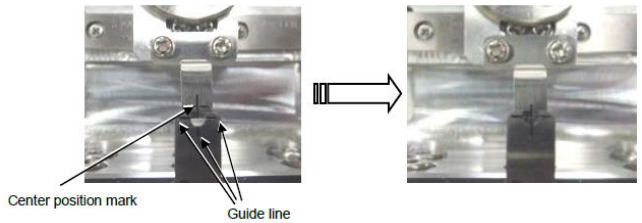
(7) Ensure the chamber is at air, ie AIR LED is not blinking and is WHITE.

If the EVAC LED is Blue, press the EVAC/AIR switch. The AIR LED (WHITE) should start blinking. When the AIR LED stops blinking and remains illuminated the chamber is at AIR.

(8) After the AIR LED stops blinking wait approximately five seconds or more before slowly drawing out the specimen stage.

(9) Insert specimen stub assembly into the stage base.

(10) **OPTIONAL** Lightly tighten the hex screw to secure the specimen stub assembly to the stage base.



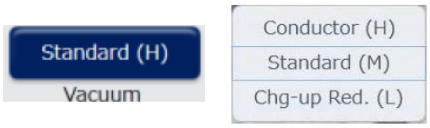
(11) Use the X, Y knobs to centre the specimen stage by lining up the centre position mark with the guides.

(12) Press the EVAC/AIR Switch to evacuate the chamber. The EVAC LED will blink BLUE while the chamber is being evacuated. Once evacuation is complete (~2.5 min) the EVAC LED will stop blinking and remain illuminated (BLUE)

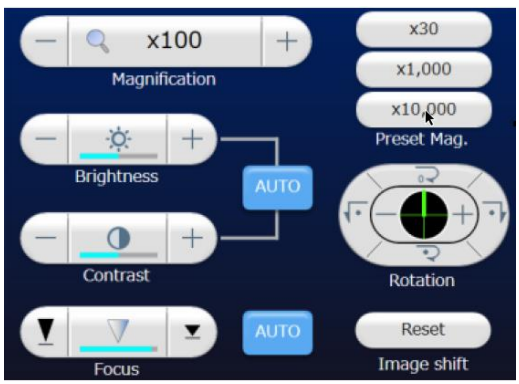
4. Starting Observation

(13) Select Accelerating Voltage / Observation condition.

(14) Select Vacuum level



(15) Select Detector. Can change selection later so not critical to select at this point.



(16) Click the 

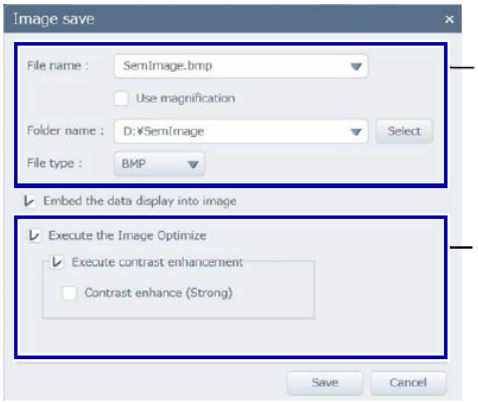
button to turn on the high voltage.

(17) Use the auto functions

a) Set desired field of view using the X, Y knobs on the front of the TM4000.
b) Adjust the Brightness and Contrast (click the Auto B/C button.
c) Perform focusing (click the Auto Focus button)
    a) Perform manual focus adjustment if required.

5. Saving Captured Images

(18) Click the “Save” button to capture the image



NOTE: Quick Save will save the image on the screen, ie lower resolution than if you use the Save button.

(19) After the image capturing process is completed the Save Image dialog will be displayed. Input a file name and save the image.

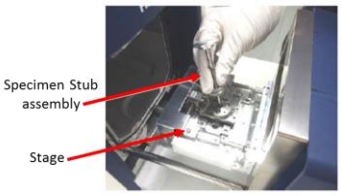
6. Stopping Observation

(20) Click the 

button to turn off the high voltage.

(21) To remove the sample press the EVAC/AIR switch to introduce air into the specimen chamber. Wait until the AIR LED (WHITE) stops blinking and remains illuminated.

(22) Slowly draw out the specimen stage, undo the hex mounting screw and remove the specimen stub assembly from the stage.



(23) Close the specimen stage door.

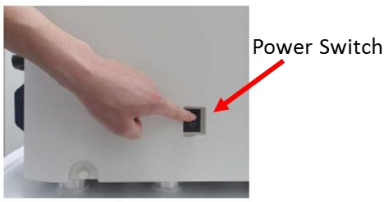
(24) If you are not looking at any other specimens, press the EVAC/AIR switch to evacuate the chamber. The EVAC LED (BLUE) will blink while the chamber is evacuated and will stop blinking and remain illuminated once the chamber is under vacuum (~2.5 min)

7. Shutting Down The Instrument

(25) Make sure the chamber is under vacuum, ie EVAC LED is not blinking and remains illuminated (BLUE)

(26) Close the TM4000 Graphical User Interface (GUI)

(27) Turn off the Power Switch on the right side of the TM4000.



NOTE: Always leave the chamber under vacuum when system not in use. This helps keep dust and moisture out of chamber to ensure the microscope remains in good condition.