

## SATURATING THE FILAMENT

If you are doing a bunch of samples, remember where you turn the filament knob to reach saturation. Then just turn it to the same place each time.

- 1) Set your voltage to 15kV. Do this before you turn the power on.  
If you need a different type of image, you can raise or lower the filament manually so that it saturates at a lower or higher kV. Each quarter turn that moves the filament closer to the bottom (I think) of the holder will raise the saturation by about 5kV. If you really want to do this you should make sure that you turn the voltage back on at .03kV so that you don't blow the filament if you move it too much.
- 2) Turn the power on by pressing the ACC/VOLTAGE button.
- 3) Wait 10 seconds.
- 4) Put the contrast on manual.
- 5) Press the waveform button 2 times. Look at the right TV screen.
- 6) Move the waveform towards the bottom 1/3rd of the screen by moving the brightness and/or contrast knobs.
- 7) Slowly turn the filament on- turn the filament knob clockwise and see that the emissions panel is slowly filling up (Next to ACC/VOLTAGE panel). Do not overcharge the filament by lighting up the entire emissions current panel.
- 8) The line will move to a high spot on the screen. If the line goes above the top of the screen, use the contrast knob to move the line back down onto the screen. Then after you see the first peak, keep turning the filament knob, and the line will start to go down. Then, the line will start to go up again. When it reaches this second peak turn the filament down just a little. The filament will be saturated.
- 9) It should saturate around 3 o'clock.
- 10) Now, look at the four knobs right underneath the left screen. Move these cw and ccw. Use these knobs to move the line on the right screen to the highest peak.

Notes: Watch the TV screen on the right. You want to be able to see an image that looks like a line tracing out the top of a mountain. If the line is very fuzzy this is alright, this is just a result of the type of sample that you are using.

(As a control, the filament should be set so that at 20kV it saturates at 80-100mA.-- only for when you are resetting the filament)