Microvision System SOP
Koehler Illumination Alignment

Refer to the following page for a picture of the microscope with the controls labeled. Alignment can be done using the eyepiece or CCD camera (a little more difficult).

1. Obtain a fairly reflective surface (i.e., a mirror or silicon wafer), but something that is slightly scratched or has dust on it. Place it under the lens and focussing on the scratch or dust.

2. Slide the Bertram lens in. The Bertram lens is the black filter slide near the front of the microscope, labeled 'pH'.) This will allow you to see the LED once it is properly aligned rather than the surface.

3. Pull the aperture rod, labeled 'A', all the way out.

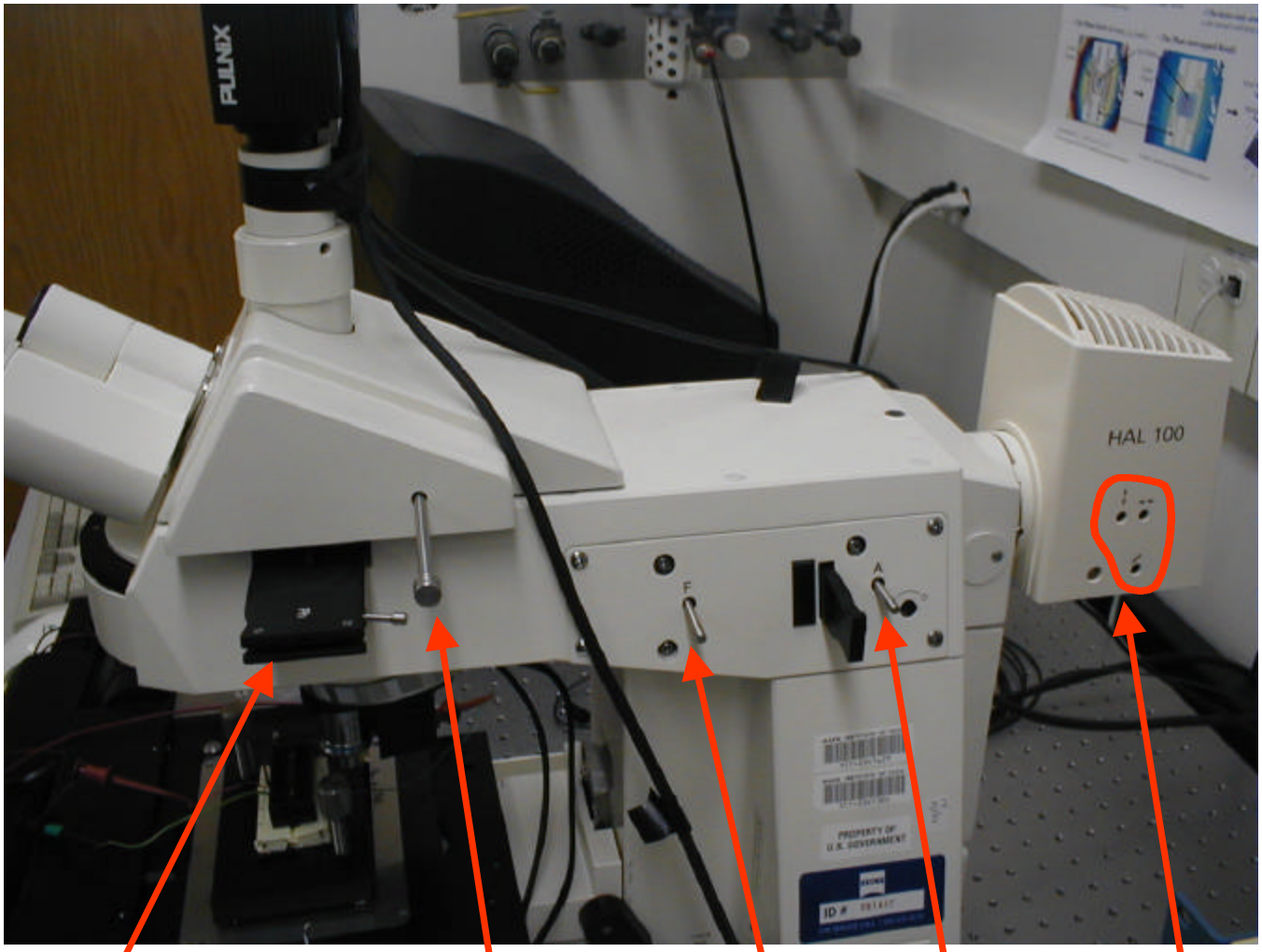
4. Using the lever on the end of the Bertram lens, focus on the edge of the aperture region. That is, focus on the edge of the black circle making it a sharp edge.
   Note: The aperture can be centered using the screw above and below the aperture rod. (The screw to the right is for another filter.)

5. Using the Zeiss screwdriver in the x, y, and z holes on the LED housing, center the LED and focus in on it. The goal is to flood the aperture with the light from the LED.
   Note: Do not use the lever on the end of the Bertram lens to focus in on the LED or change the height of the stage. Doing this would change the focus to which your aligning the LED. However, if the LED is far out of focus, this may help you to find it. Before continuing, you need to return to step one to ensure you are aligning the LED for the proper focus.

6. Push the aperture rod back in.

7. Slide the Bertram lens out.

8. Adjust the field of view using the rod labeled 'F'. Slide the rod in until you see the whole field of view filled by light.



The image select rod has three positions:
• all the way in for all the light to the eyepiece, none to the CCD camera
• half way out for half of the light to the eyepiece, half to the CCD camera
• all the way out for none of the light to the eyepiece, all to the CCD camera