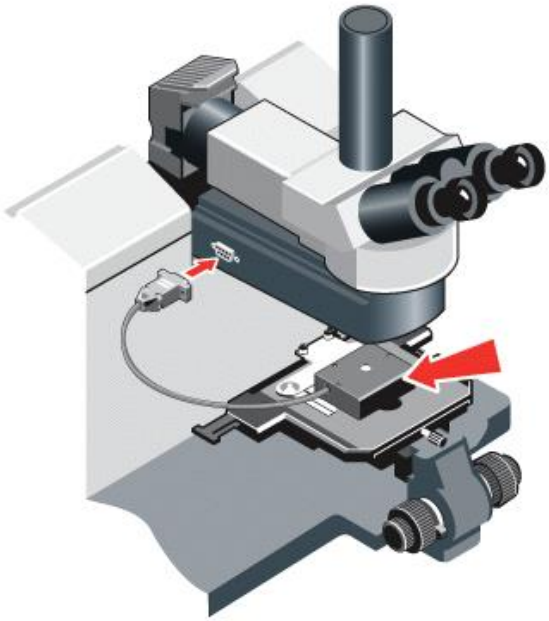
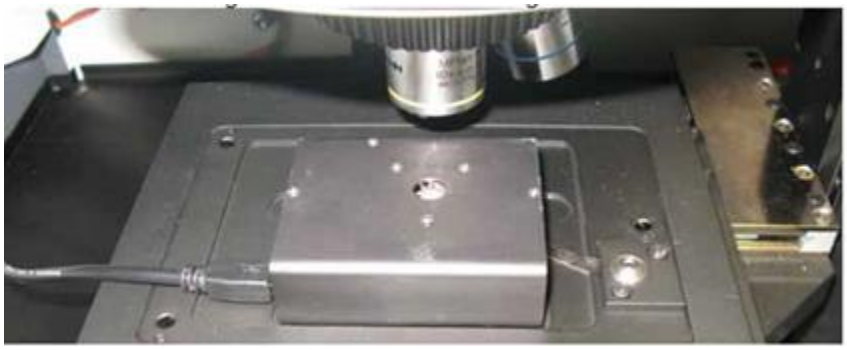
Steps to perform the Alignment and Calibration on the DXR Microscope

Alignment

In the sample compartment of the DXR is the alignment/calibration tool.
The tool is placed on the stage as shown (the tool is normally plugged in the DXR and resting in the sample compartment





DXR/ DXR 2. Tool is oriented on stage with cable exiting out left side as seen above.

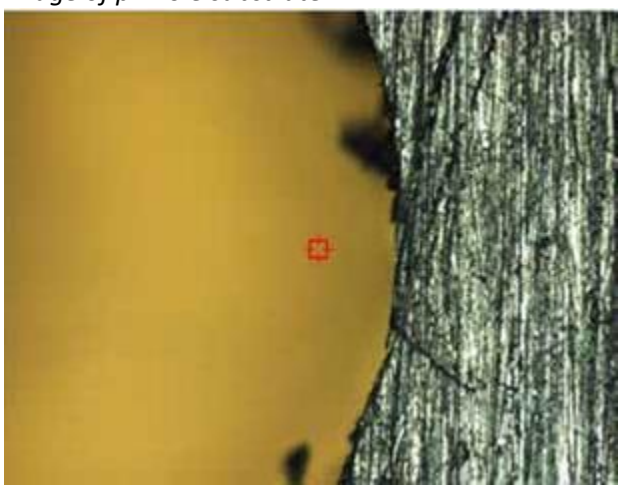
DXR 3 Tool is oriented on stage with cable exiting out the back as seen below.

Note: The 10X objective is used for the Align and calibrate routines

- Go to Collect: Experiment Setup in OMNIC
- Verify the laser is on in the Bench tab
- Go to the Alignment Tab
- Step 1: Focus on the Alignment tool pinhole through the eyepiece (images are for reference)

  Adjust the illuminator brightness to eliminate all glare. In the photo below, the metal sheet is at the right, and the substrate is visible to the left through a circular opening in the metal substrate.

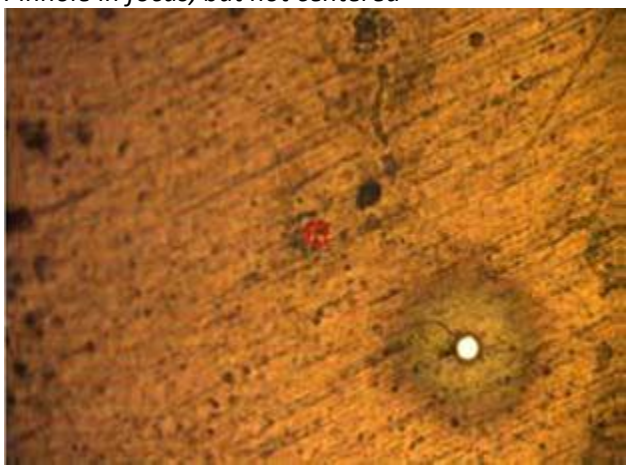
  Image of pinhole substrate



  Locate the pinhole in the substrate. It is not necessarily in the center of the circle. Each align tool will be different because the pinhole is on a strip of film. Move the stage horizontally so that the substrate fills the field of view. Focus sharply on the substrate, adjusting the illumination to optimize the image contrast. You should see the texture of the substrate; the presence of dark spots and streaks is normal. The pinhole will be somewhere on the substrate.

Reduce the illuminator intensity so that the backlit pinhole becomes more visible, confirming its location.

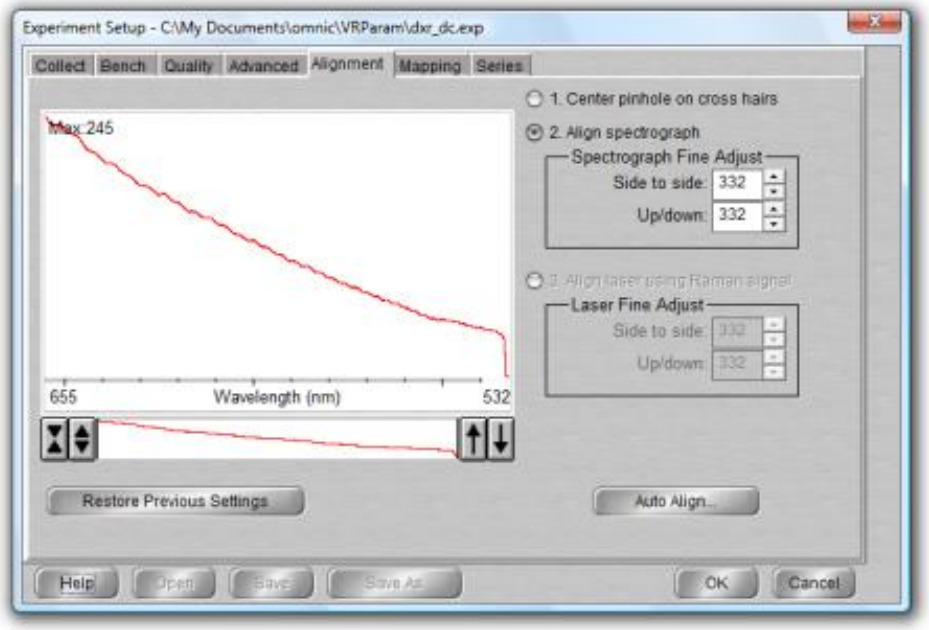
Pinhole in focus, but not centered



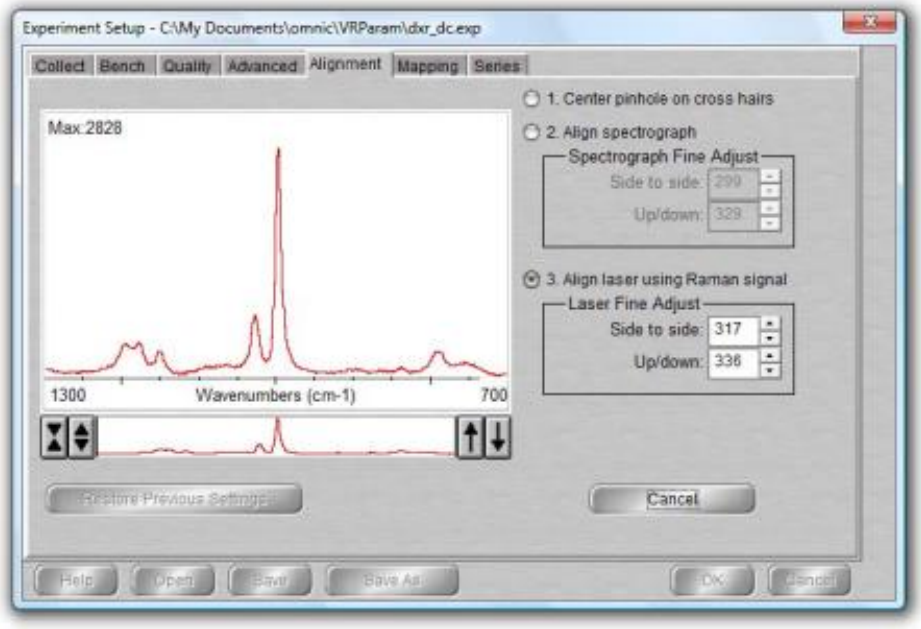
Move the stage horizontally and vertically to place the pinhole exactly in the crosshairs as shown below: (In the eyepiece the pinhole will be the size of the inner most crosshairs that create a box similar to the picture)

Reduce the illuminator intensity so that the backlit pinhole is the one thing visible to confirm the focus is on the pinhole.

- Click on step 2 to start the routine



You should get a signal similar to the one shown above
Once step 2 has completed the routine will automatically move to step 3



A spectrum of polystyrene will be displayed
After step 3 completes the Alignment is complete and the Experiment setup can be closed

Calibration

With the tool still on the stage move to the Calibration

- Go to Collect menu: Calibrate Instrument…

- Verify the pinhole is in focus and centered
- Start the routine

Once completed the tool can be removed and you can go back to collecting samples