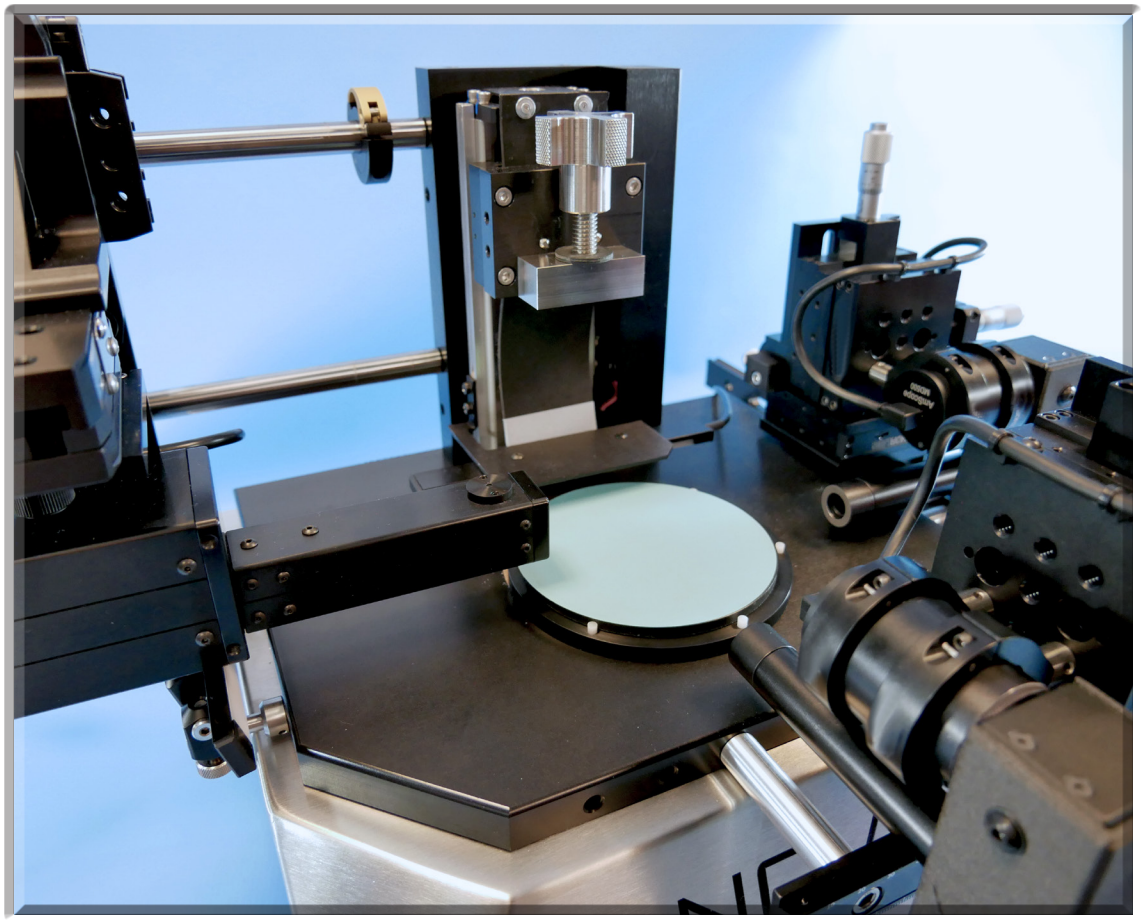
KRELLTECH

Vision Systems Reference Guide

| SVX-7 | SV-9 | SVX-10 | SV-11 |



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Rev. 1 - 2/2023

Vision Software

Important: Always insert microscopes in designated numerical order

Software Settings

NOTE: Recommended settings pertain to videoscopes purchased post February 2023. These parameters optimize frame rate. Some may need to be adjusted depending on lab lighting conditions, lens magnification, and physical properties of observed subject.

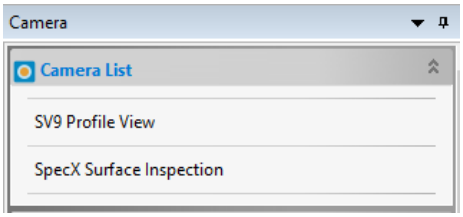

Figure 1

1. Select the microscope to be used (see Figure 1). Please note only one camera can be run at a time. The camera view must be closed out in order to switch views. To close current view, press CTRL+W or right click the live view tab and close.

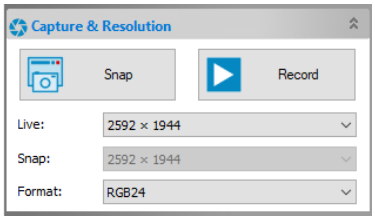

Figure 2

2. Select the resolution. Higher resolutions will have a greater impact on frames per second performance. Low frames will cause choppy video quality. For videoscopes purchased pre-February 2023, 800x600 resolution should be selected for smooth operation.
NOTE: Snap and Record will capture images and video respectively. For images with measurements, the image must be merged to save with graphics. Either press F2 to flatten image or navigate to: 'Layer' > 'Merge to Image.'

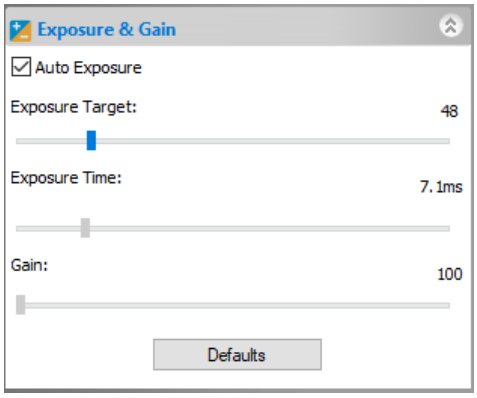

Figure 3

3. Auto exposure and Exposure target will automatically adjust based on the amount of light and the selected area. If experiencing dropping frames, deselect auto-exposure and set Time to about 15ms.

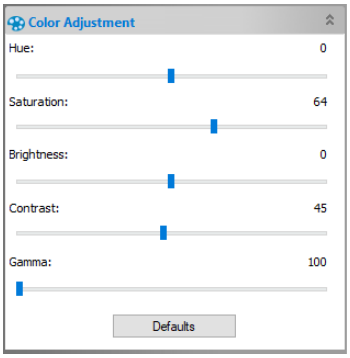

Figure 4

4. For highest clarity performance, the Color adjustment tab should be tuned. For surface inspection, the coarseness of the step will affect the amount of light reflected. Saturation, Brightness and Contrast can be adjusted for optimal viewing quality.

Measurements

The Measurement menu can be accessed through a drop down tab or selected from the toolbar. For a full list of desciptions and functions, see Section 14 in the Help section in the programs (F1).

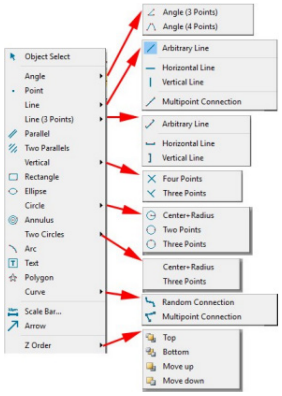

Figure 5

Magnification

To insure accuracy of measurements, the correct magnification calibration must be set. Standard lens and camera combination profiles have been pre-loaded into the program. Select the option for your set up. If further refinement of the calibration is required, see Section 15.4 in the Help section.

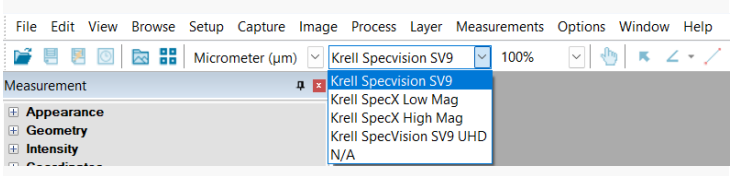

Figure 6

SpecX Surface Inspection

Lens	Working Distance	Field Of View
High	6 mm	250um
Low	10 mm	550um
Wide View	15 mm	660um

Figure 7

SVX-7:

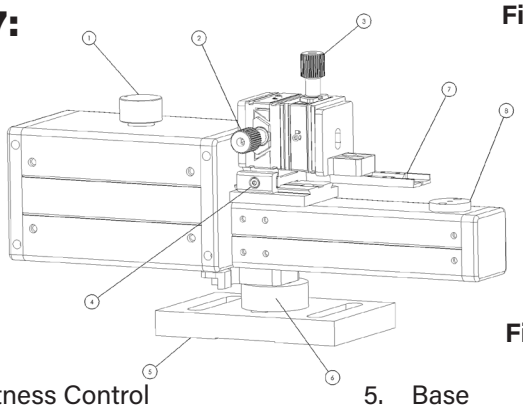

Figure 8

1. Brightness Control
2. Y-Axis - Pan
3. Z-Axis - Focus
4. X-Axis - Alignment
5. Base
6. Spacer
7. Nest
8. Lens

Connector Inspection:

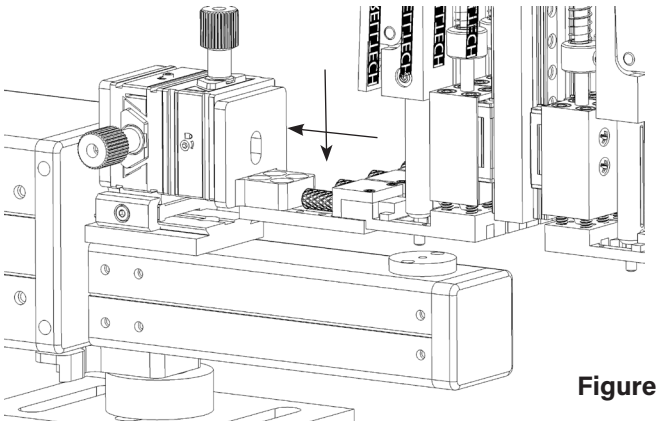

Figure 9

1. Lift insert position to be inspected and slide Microscope into place
2. Press connector holder into nest and slide to back edge
3. Adjust X-Axis[4] until L.E.D is centered on Fiber
4. Adjust Y-Axis[2] to pan to center
5. Use the Focus Knob[3] and Brightness control[1] to view subject

Typical Micron Grade Film Finish (LCUPC):

A. 6um Diamond
B. 3um Diamond
C. 1um Diamond
D. XW - Final Film

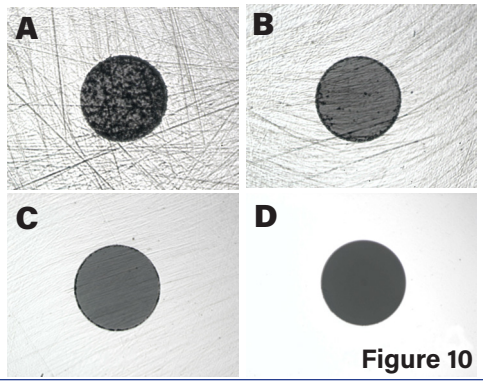

Figure 10

SVX-10:

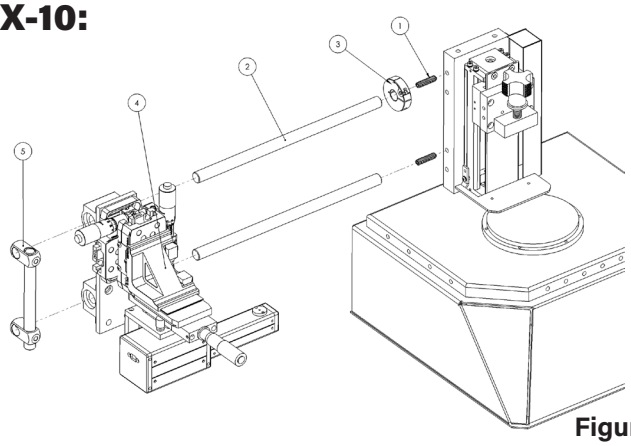

Figure 11

1. (2) 1/4-20 x 1" Set Screw
2. (2) Slide Rails
3. Quick Release Clamp
4. Camera Rig
5. End Stop Bar

Setup:

1. Screw 1/4-20 x 1" set screws into the First and Third tapped hole on the Stage upright.
2. Attach side rails. Ensure the positional stop is on the top rail.
3. Slide on the camera rig.
4. Lock Stop Bar at the end of the Rails.

Inspecting The sample:

Inspection should be performed in-between each step to ensure the best surface quality results. Once the processing step has concluded, return the fixture to the home position. With a slight lift, slide the camera rig along the guide rails until lens is approximatley under the subject.

Using the positional stages, adjust the micrometers until subject is centered and in focus. See figure 7 for Working Distance. To operate the Y-axis stage, turn the locking knob away from user for coarse movement. Lock the knob, by turning it towards the user to engage micrometer control. Positional stop may be adjusted for faster locating. Ensure Microscope is returned to the end stop before continuing processing.

NOTE: A small amount of light oil should be applied periodically to the guide rails to maintain smooth sliding operation.

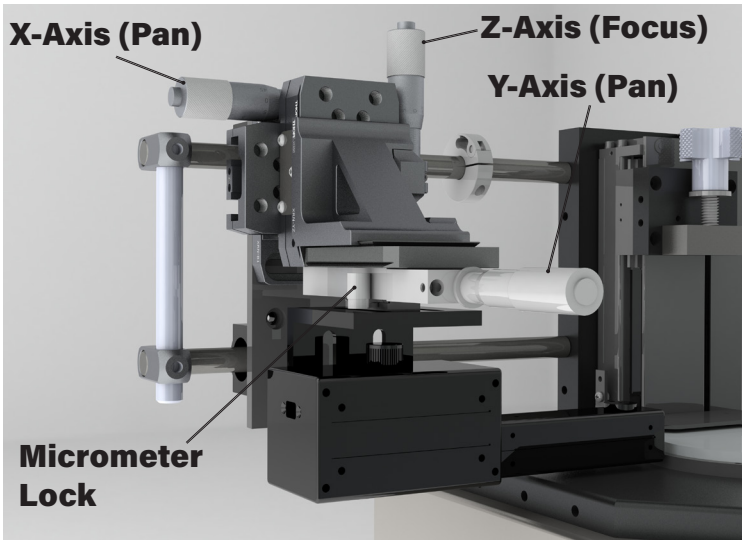

Figure 12

SpecVision Process View

SV-9:

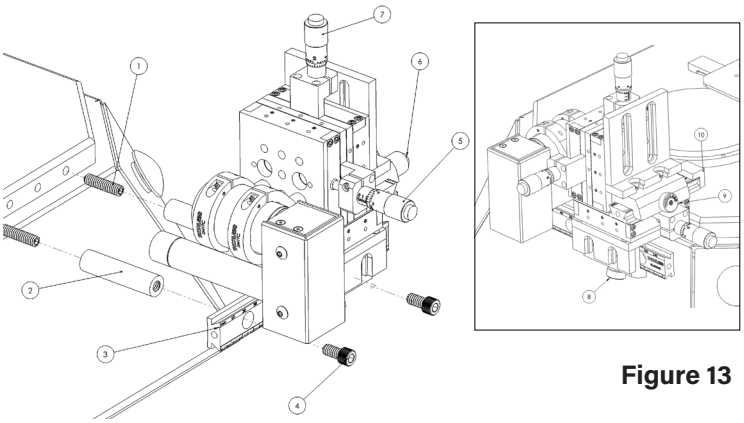

Figure 13

1. (2) 1/4-20 Set Screw
2. (2) 2" Standoff
3. Mounting Dovetail Rail
4. (2) 1/4-20 SHCS
5. Y-Axis Fine Focus
6. X-Axis Fine Pan
7. Z-Axis Fine Pan
8. X-Axis Coarse Pan
9. Y-Axis Coarse Focus
10. Dovetail Stop

Setup:

1. Screw 1/4-20 Set Screws and 2" Standoff into the Third and Sixth tapped holes on the front of the NOVA baseplate.
2. Loosely attach the X-Axis Dovetail Rail. Level the Rail to the polishing surface by using a leveling instrument and a glass disk on the platen as a datum. Secure in place.
3. Slide the camera rig on to the Dovetail rail. Use adjust ments to locate and focus on subject.
4. **Working Distance: <u>93mm</u>**

Illumination:

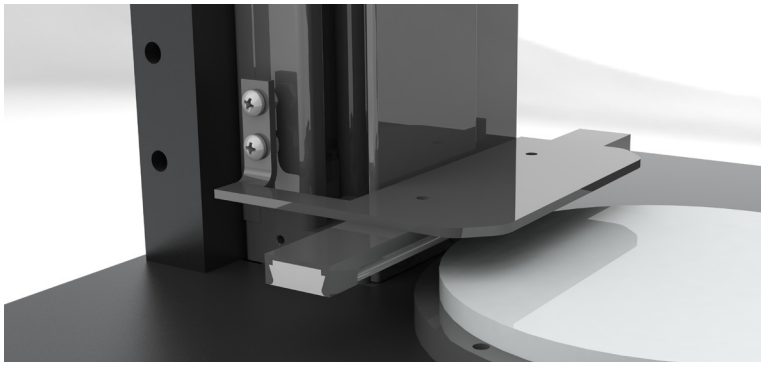

Figure 14

To set up for use, carefully loosen the two mounting screws on the side of the Actuator. If unscrewed too far, the mounting nuts may fall out. Simply replace by dropping the nut back through the top of the side rail.

Using a Glass Disk, position the Lighted Saftey Guard 0.35" above the polishing surface. This height may be altered or the guard may be angled depending on visual needs.

Important: Check for any obstruction with the platen prior to operation.

SV-11:

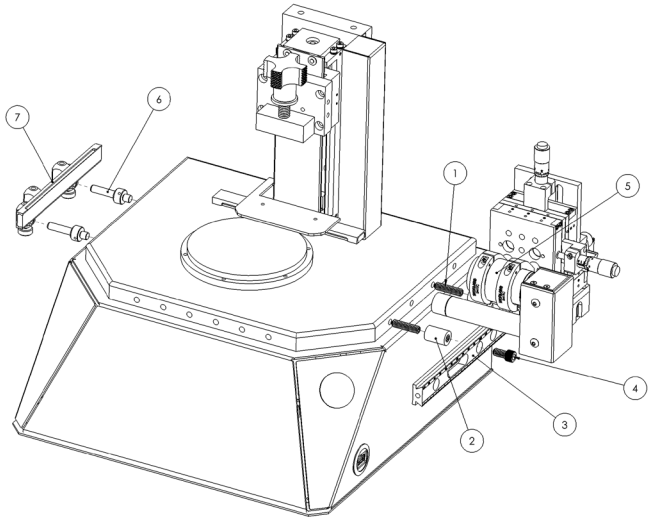

Figure 15

1. (2) 1/4-20 Set Screw
2. (2) 3/4" Standoff
3. Mounting Rail
4. (2) 1/4-20 SHCS
5. SpecVision
6. Mounting Post
7. Flip-up Light Bar Assembly

Setup: Videoscope

1. Screw 1/4-20 Set Screw and 3/4" Standoff into the First and Third tapped holes on the side of the NOVA baseplate.
2. Similarly to the SV9 setup, loosely attach the Mouting Rail and level to polishing surface.
3. Slide the camera rig on to the Dovetail rail. Use adjust ments to locate and focus on subject.
4. To increase travel distance, loosen or remove the slide stop. For full range, 1/4" Thick glass disks are available as the polishing surface must be raise for clearance of the microscope.

Setup: Illumination

1. To install the Flip-up Light Bar, screw the two mounting post into the Second and Fourth tapped holes.
2. Slide the Flip-Up Bar assembly onto the posts and secure in place with bottom thumbscrews.
3. To increase rotational resistance, tighten top plastic set screws. DO NOT OVERTIGHTEN.

NOTE: If using in combination with the SVX-10 (figure 12), the videoscope may need to be raised prior to rotating the light fixture out of the way.