

Operation Procedure for PROF2 Veeco Dektak 150 Surface Profilometer

Start Up

1. Turn on the profilometer via the “1” button on the small controller box (located beside the tool)
2. Launch “**Dektak**” application on the computer
3. Open the shield cover

Operation

1. Verify the correct recipe is loaded (“default” is the normal recipe) by looking at the name at the top of the screen. If the correct recipe is not loaded, then click “File” and “Open” and choose the correct program
2. Load the sample to be measured onto the stage (use the vacuum chuck if desired) and move the stage and sample to be centered under the stylus using the small knobs or the sliders.
3. Close the shield cover to reduce the effect of air currents on the measurement
4. Click the “**Tower down to null position – stylus up**” button to lower the tower to the sample. This will find the correct sample height.
5. Adjust the light intensity using the light bulb icons or the up and down arrows as needed
6. Click the “**Tower down to null position – stylus down**” button and verify the stylus moves to the center of the red crosshair and touches the sample.
7. **IMPORTANT: DO NOT MOVE THE SAMPLE OR THE STAGE WHEN THE STYLUS IS MAKING CONTACT WITH THE SAMPLE**
8. The green crosshair on the screen is just a positioning/alignment marker and can be moved by going to a new location, clicking the right mouse button and choosing the appropriate option.
9. Click the “**Release stylus**” again to raise the stylus off the sample.
10. Click the “**Switch to scan routines window**” button to display and edit the program parameters
 - a. Click on any program variable name to get to the program parameters screen
 - b. For normal scanning have the scan type set to: **Standard Scan**
 - c. For 3-D map scanning set the scan type to: **Map Scan** and edit the map parameters on the 2nd tab. Contact SMIF if further explanation or instructions on mapping are needed.
 - d. If a permanent change is desired to a recipe, changes can be made and the recipe can be saved under a new name by clicking “File” and “Save As”.
Please do not permanently save changes to the default program.
 - e. If an automation program is desired, please contact SMIF for further assistance.
11. Click the “**Switch to sample positioning window**” button to return to the camera image
12. To make a scan, click the “**Run currently active scan routine at current stage location**” button or the “**Scan Here**” button

13. While the scan is running the trace will be displayed on the screen. If it is greatly off scale/out of range/slanted then adjust the large black wheel under the stage and scan again.
14. Once the scan is complete a graph of the results will be displayed. To level the data select 2 areas for level reference and move the R and M cursors to them by clicking on the “R” and “M” letters on the graph and moving the cursors with the mouse. Once in the desired locations, click the “**Level the trace at the current R and M cursor intercepts**” button
15. Move the cursors to the desired measurement locations and the measurement data will be displayed at the bottom left side of the screen in the **Watch List** window.
16. If desired, the cursors can be “spread/thickened” to create average over area locations for the measurements instead of single points. Do this by selecting the arrows by the cursor letter moving the arrows with the mouse.
17. For further post analysis of the chart data right click in the **Analytical Results** window on the left side of the screen and select **Append**. Choose the desired analytical values to be displayed.
18. At the bottom of the analytical values screen “**Measure**” means the values will display for this scan only and “**Measure/Program**” will display for this scan and future scans under the same program
19. The buttons at the top of the screen can be used for more functions if desired.
20. Click the “**Switch to sample positioning window**” button to return to the camera image and repeat measurements as needed
21. Open the shield cover
22. Remove the sample from the stage, use caution not to damage the stylus. The tower can be raised first if needed to allow for more room by clicking the “**Tower up to load position**” button.

Shut Down

1. Close the software, making sure you do not save changes to the default program
2. Turn off the profilometer via the “0” button on the small controller box (located beside the tool)
3. Close the shield cover
4. Leave the computer powered on