Dektak User Check List:

1. Turn on power supply (Black box on right)
2. Press (I) button on white power control box
3. Start Vision64 Software.
4. Let system warm up 15 minutes.
5. Put on gloves before touching anything inside of the lid
6. Check that the flat glass block is free of dust
7. In the "Live Video" Window, hit "Unload Sample".
8. Place your sample on the chuck
   a. Sample should be clean on the backside
9. In the "Live Video" Window, hit "Load Sample"
10. To position a sample using the manual sample-positioning stage controls:
    a. Ensure the stylus is not touching the sample surface. If it is, click the Tower Up button on the toolbar.
    b. Position the scan start site by using the X-Y positioning levers.
       i. Pull the lever below the front of the platform for coarse X movement. Push the lever back up to secure coarse position
       ii. Pull the lever below the left side of the platform for coarse Y movement. Push the lever back up to secure coarse position
    c. Turn the respective knobs to finely position the sample.
    d. Hit "Tower Down" to lower the stylus. The stylus will hit the sample, and then retract to ~1mm above the surface.
11. You can use the calibration standards (in DektakXt drawer) to calibrate the instrument prior to use.
12. The "**Measurement Set-up**" window allows you to control scan parameters.
    a. **Scan Type**: Standard Scan
    b. **Range**: Sets the Z range of the instrument. Set this to a range slightly larger than the feature you want to measure.
    c. The selected scan range is scaled across the LVDT output of the stylus head sensor and digitized. greater the scan range, the lower vertical resolution.
    d. **Profile**: Will determine whether start at bottom, middle, or top of designated range.

Vertical Scan Range	Vertical Resolution
μm	nm
6.5	0.1
65.5	1.0
524	8
1000	15

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       i. Valleys: 90% of the range below the zero horizontal grid line.
       ii. Hills and Valleys: 50% above and 50% below.
       iii. Hills: Provides 90% of the range above the horizontal grid line.
    e. **Stylus Tip**: 2 microns (need to reset this everytime you start the

program!)

    f. **Stylus Force:** Standard range is between 1 and 15mg. Default is 3mg,

    g. **Length:** Y length of scan(can measure up to 55000um (5.5cm))

    h. **Duration**: Time of scan (Length and Duration determine the resolution of your scan)

    i. Under the "Advanced Options" tab (in "Measurement Setup), you can select whether you want the software to auto-save your data.

13. Scans

    a. Dingle scan: click the "Single Acquisition" button, and the scan will begin.

    b. Multiple identical scans: Under measurement setup menu click Click the "Advanced Options" tab and change the number of measurements. Press "Measurement" to begin scanning.

    c. Manual Leveling: You can adjust the stage tilt by turning the silver knob in the front of the instrument to counteract the slope in your data

14. Analysis

    a. After the scan is complete, the "Data Analysis" window should utomatically open. If not, you can click on it.

    b. To export your data, you can right-click on the plot and select "Export Data".

    c. Select the "Data Analysis" Screen (if not already there):

    d. Under "Data Analyzer" window, select "Terms Removal (F-Operator)". You can now right click on your data to set your reference cursor to zero and level your data.

        i. You should see a trace of your data in the "Data Analysis" box.

        ii. Right click inside the "Analytical Results" box and select "Append". Select whatever you want to measure, and a location for R and M cursors. When you hit "Calculate" you will see all of those values listed in the Analytical Results box.

15. Unloading Sample:

    a. Hit "Tower Up".

    b. Hit "Unload sample".

    c. Either load a new sample or power the system down.

16. Shutdown:

    d. Close the Vison64 software.

    e. Press the black OFF button on the EMO Box .

    f. Turn off the power switch on the black power supply box.