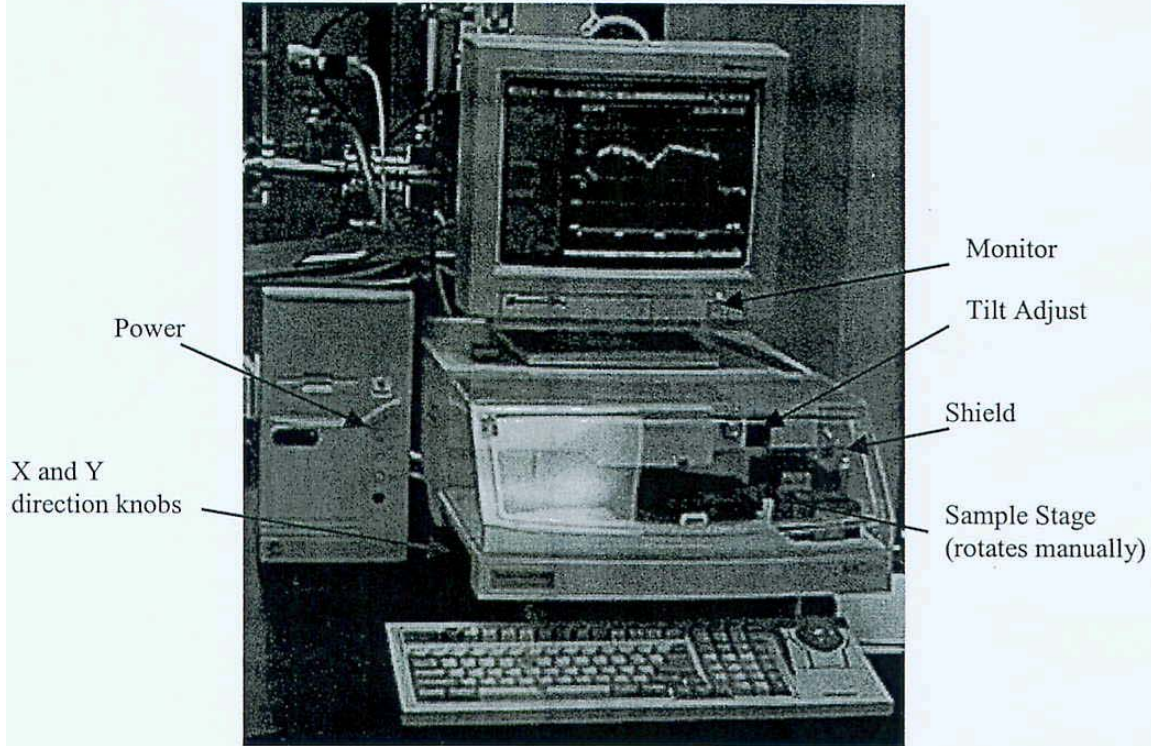


Profilometer

Before scanning

- Come prepared with gloves
- Use logbook to record user/date/time frame/change in settings/etc.
- Turn on by pushing power button located on CPU
- Press Enter to initialize



Operating

- Adjusting settings
 - Use the track ball or L and R arrow keys to select menu.
 - Select Calibration and be sure the factor is set to 1.
 - To return to main menu press Esc.
 - Configuration menu can be used to adjust screen colors, etc.
 - The recipe menu will allow adjustments to scan.
- Changing the Recipe
 - Select View/Modify to view default scan
 - Change units using L and R arrow keys
 - Max scan length is 10mm, Min is .01mm
 - Scan speed can be adjusted, the slower the speed, the greater the accuracy of the scan

- Sampling rate is the number of points scanned per second and affects the resolution of the scan.
- Horizontal resolution is set depending on length and speed chosen.
- The direction of the scan can be changed using the L and R arrow keys. Scanning in the right direction (as opposed to the left) gives more range and better sensitivity due to the design of the stylus.
- Multi-segment scan selection allows the scan to be broken into different segments; it can also measure an average of several scans together.
- The stylus force is the pressure at which the stylus hits the surface of the sample. It should be set at 16.9mg and ordinarily should not be changed.
- The preferred contact speed is 3 so as not to damage the stylus.
- Radius required is 0.0
- Vertical units can be adjusted and do not have to be the same as the horizontal units
- Vertical range and resolution, along with Profile Type, and Vertical display should typically be left at default settings.
- For Graph, one can select raw, rough, wavy, or all data
- The Long and Short wave cutoff should be left at default along with Fit & Level.
- Surface Parameters can be viewed and adjusted, however adjustment is typically unnecessary.
- To save recipe press F1 and select letters for naming recipe using spacebar; then press enter.
- To return to main menu press Esc.
- Select Recall to find a saved scan; Catalog to find a saved recipe
- Run a calibration scan
 - Two calibration standards in boxes are supplied (stored inside), one with a sample of 16 μ m thickness and another of 8133Å.
 - The elevator can be rotated manually
 - The x and y direction can also be adjusted manually using the knobs on the left side of the machine.
 - Position sample underneath stylus, the position can be adjusted more accurately before taking the scan.
 - Close the shield to avoid drafts and noise which may cause discrepancies in the scan.
- Preparing sample for scan
 - Align sample under stylus, light indicates position of camera.
 - ❖ **CAUTION: Light does not indicate the position where stylus touches the sample.**
 - Press Z- θ to activate camera
 - The up and down arrow keys will raise and lower elevator. The down arrow raises the elevator; press until stylus and sample come into view but are not touching.
 - Using X and Y knobs, position sample in range of scan length. (stylus will automatically retract if it remains idle for several moments.)

- If sample is not aligned properly, the sample stage can be adjusted manually.
 - ❖ **CAUTION: Be sure that the sample and length of scan are such that the stylus will not fall off and be damaged.**
- Press green Start button to begin scan, data will appear after scan is complete.

Analyzing Data

- Cursors can be position using L and R arrows, alternate between L and R cursors by pressing spacebar. Double click spacebar to select both cursors simultaneously and obtain an average for data between the cursors.
- Press up arrow for delta average cursor. Press down arrow to decrease delta width—sharp peaks at the beginning of end of a scan usually represent noise
- If the scan needs leveling hit the LEVEL button and select an area thought to be flat using the cursors. Hit the LEVEL button again. If scan is still not level, repeat leveling procedure except choose F3 Mechanical Level instead of hitting the LEVEL button again. The following prompt is displayed: **Turn X counts upward/downward**, where X is a number calculated from the data scan.
- Press ZOOM to view a particular area of a scan
- Press F4 to save data
- Press Z-θ to move elevator away from sample
- Press F1 to return to Main Menu