

Typical Operating Procedure

Performing a Scan

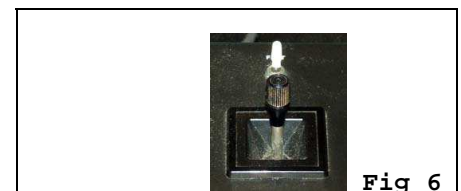
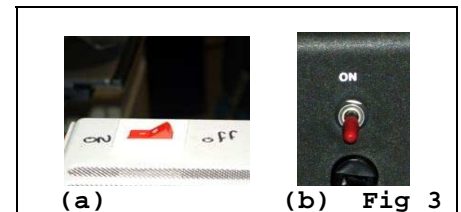
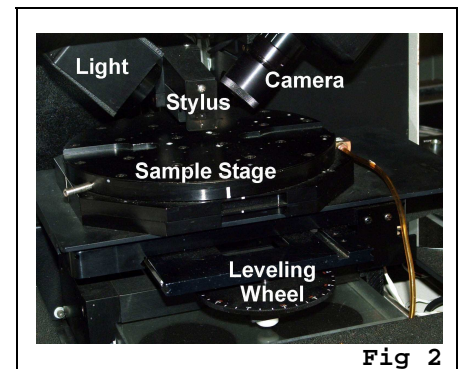
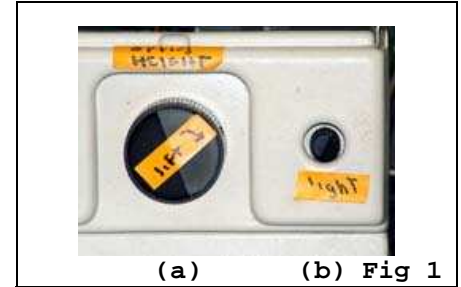
1. Turn Zoom/Focus knob [Fig 1a] fully clockwise to raise Stylus [Fig 2].
2. Turn illuminator knob counterclockwise [Fig 1b] until Light illuminates on Sample Stage. [Fig 2]
3. Switch ON red toggle switch [Fig 3b] on back of Directional Control box.
4. Switch ON red power switch [Fig 3a] on back/top of MEU.
 - Note:** Dektak 3030 Logo screen [Fig 4] displays.
 - Note:** Rotate brightness knob left/right [Fig 5] to adjust screen.
5. Press **PRGM** to display Dektak 3030 Menu screen. [Fig 6]
6. Place sample directly under Stylus on Sample Stage. [Fig 2]
7. Rotate Leveling Wheel [Fig 2] to value noted on machine.
8. Slowly rotate Zoom/Focus knob [Fig 1a] counterclockwise until sample surface is in focus.
 - Caution:** Avoid hitting sample with stylus.
 - Note:** Adjust Illuminator knob [Fig 1b] if needed.
9. Using joystick [Fig 5] move sample region of interest to right of stylus location on screen.
 - Note:** Left/Right joystick motion moves sample left/right (onscreen); Up/Down joystick motion moves sample down/up (onscreen).
10. Press **ΔV** to lower stylus to sample surface.
 - Note:** A delay of 8-10 sec may be observed before stylus moves.
11. Adjust scan parameters as needed.
 - Note:** See Set Scan Parameters section.
12. Press **SCAN** to perform scan.
 - Note:** Scan progress screen appears. When complete, measured data will display.
 - Note:** Inclined/declined profiles are common. See Leveling Plot section.
 - Note:** To print profile press **PT**. Printer on top of monitor.

Shut Down

1. Rotate Illuminator knob [Fig 1b] fully clockwise.
2. Rotate Zoom/Focus [Fig 1a] knob fully clockwise to lift stylus.
3. Remove sample.
4. Switch off MEU power switch. [Fig 3a]
5. Switch off Directional Control power toggle switch. [Fig 3b]

Leveling Plot


1. Press **REF**. Use **◀** and **▶** to move vertical reference line [R] onscreen to left edge of a flat region of scanned data.
2. Press **MEAS**. Use **◀** and **▶** to move vertical reference line [M] onscreen to left edge of a flat region of scanned data.
3. Press **LVL**.
 - Note:** Scanned data is replotted using [R-M] region as reference level.



Set Scan Parameters (Typical)

1. Press **PRGM** to display Dektak 3030 Menu. [Fig 7]
2. Press **PRGM** to display Scan Parameter screen. [Fig 8]
3. Press **▲** or **▼** to highlight Scan Length parameter.
4. Type **2 0 0 1** (for example) to select 2001 μm scan length.

Note: 2001 μm is minimum scan length required to avoid known "valley" artifact. See Avoid "Valley" Artifact section.

Note: Select Scan Length that will not cause stylus to fall off sample as this will damage stylus.
5. Press **ENTR**.
6. Use **▲** or **▼** to highlight Speed. [Fig 8]
7. Use **◀** or **▶** to highlight Medium.
8. Press **ENTR**.
9. Press **▲** or **▼** to highlight Profile.
10. Press **◀** or **▶** to highlight . (typical)
11. Press **ENTR**.
12. Press **▲** or **▼** to highlight Measurement Range. [Fig 8]
13. Press **◀** or **▶** to highlight 655kÅ.
14. Press **ENTR**.
15. Press **SCAN** to perform scan using displayed parameters.

Avoid "Valley" Artifact

The "valley" artifact consists of [Fig 9]:

- a. $\sim 1\mu\text{m}$ drop at $x \sim 720\mu\text{m}$,
- b. anomalous fluctuation $x \sim 1000\mu\text{m}$,
- c. $\sim 1\mu\text{m}$ rise at $x \sim 1720\mu\text{m}$.

Note: For example, if scanned sample has a real step at $x \sim 1400\mu\text{m}$ the resulting profile may look similar to [Fig 10] including the three artifact features described above.

To avoid this artifact, use a Scan Length (x) of:

- a. $0 < x < 710 \mu\text{m}$ **or**
- b. $x > 2000 \mu\text{m}$ (at least 2001 μm)

Note: If Scan Length is $710 \mu\text{m} < x < 2001 \mu\text{m}$, anticipate drop, fluctuation and rise in scan profile at known horizontal locations.

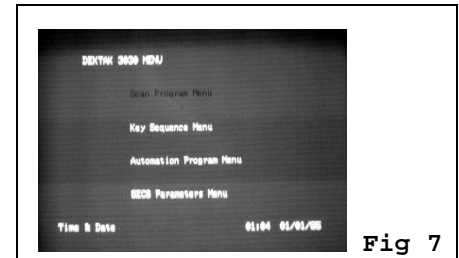


Fig 7

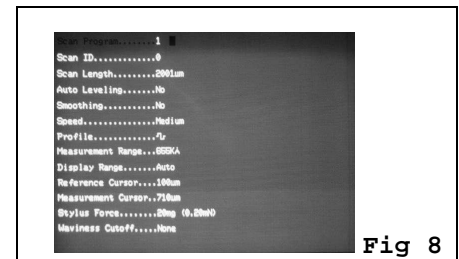


Fig 8

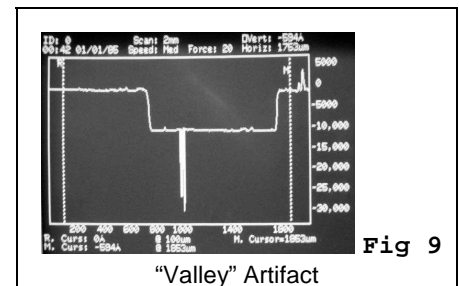


Fig 9

"Valley" Artifact

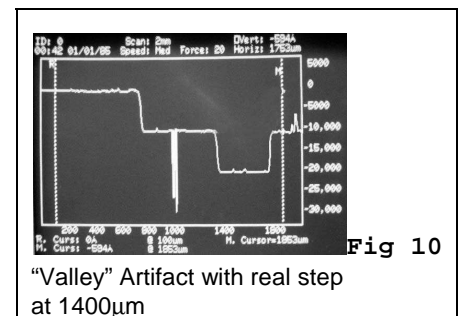


Fig 10

"Valley" Artifact with real step at 1400 μm