

Dimple Grinder Manual

Setting Grinding by Dimple Depth

1. Set the Counterweight load (20g) and select a mid-range grinding speed.
2. Determine initial specimen thickness using, for example, the electronic digital calipers.
3. Check that both motors (Table & Arm button on the Control panel) are OFF.
4. Lower the micrometer end face by rotating the Micrometer Drive (clockwise)
5. Place the mount plus specimen and centering the ring on the Magnetic Table.
6. Carefully lower the grinding wheel onto the specimen with the Cam.
7. **NB.** Take care not to raise the Micrometer Drive past zero. Raise the micrometer end face by rotating (anticlockwise) the Micrometer drive until the dial indicator needle has rotated one complete turn and just reaches zero.
8. Press the zero button to zero the Dimple Depth digital display.
9. Rotate the Micrometer Drive clockwise until the digital display reads the required dimple depth. The dial Indicator will show the thickness of the material yet to be removed.
10. Place a small amount of diamond compound onto the wheel and the specimen using a toothpick, then moisten with distilled water.
11. Turn on both motors (Table & Arm).
12. When grinding has reduced the specimen thickness to within a few microns of the final thickness, replace the grinding wheel with the felt polishing wheel. Wipe the axle with a clean lens moistened tissue.
13. Remove the specimen mount from the Turntable thoroughly clean the specimen of all grinding compound. Use cotton swab and distilled water followed by flushing with acetone.
14. Carefully mount the specimen back onto the Turntable and center using the microscope.
15. Set a higher rotational speed for polishing & set a load of about 30g.
16. Apply a small quantity apply a small quantity of 2-4 μm diamond paste to both the felt and specimen.
17. Gently lower the polishing wheel onto the specimen. Polish for a few minutes until the surface finish is improved.
18. Use a new felt wheel and repeat with 0.05 μm alumina.
19. After polishing, remove specimen from mount, & thoroughly clean it by immersing in several acetone washes. **NB.** Ultrasonic cleaner may damage some specimens & is not recommended.