

# Clinical Microscope Preventative Maintenance Procedure

(Meets or exceeds all College of American Pathology (CAP) and American Association of Blood Bank (AABB) preventative maintenance service requirements.)

- Evaluation**  
Complete a performance check of all optical and mechanical functions; notify the laboratory staff of major concerns prior to servicing.
- Tear Down and Cleaning**  
Carefully remove the oculars, head assembly, objectives (maintain sequence), slide holder, mechanical stage (if practical), condenser, blue / interference / neutral density or polarizing filters, field opening bracket with iris (if removable), and other accessories. Clean all optical surfaces using proper technique. Clean all non-optical solid surfaces including the body of the microscope using proper technique.
- Lubrication**  
If needed, apply appropriate lubrication to all moving parts ... mechanical stage bearing track and rack and pinion gears, slide holder, focus mechanism, rotating nosepiece, condenser rack and pinion gears.
- Re-assemble**
- Kohler Alignment**  
Complete Kohler Alignment using settings for the condenser alignment screws and the condenser and field iris diaphragms.
- Centration Error Check**  
Check and record the values for Centration Error ... both horizontal and vertical.
- Full Function Check**
  - Parfocality, Parcentration and Resolution of all Objectives
  - Confirm that all ocular surfaces are clean by rotating oculars under high magnification.
  - Check the function of the Inter-Pupillary Distance (IPD) mechanism.
  - Check the function of focusing oculars and / or focusing eye-tubes.
  - Confirm stage collimation by focus stability during slide movement.
  - Check mechanical stage motion and control knob tension adjustments.
  - Check bulb socket alignment and condition.
  - Confirm proper fusing. (This is also a good time to do an electrical safety check.)
  - Check all accessories for proper function and alignment: phase contrast, polarization, UV bulb alignment, micrometer calibration, dual-view systems, pointer bulbs, cameras, etc.
- Notification of Concerns to Staff**
- Written Documentation to Lab Manager** ... conforming to CAP inspection requirements
- End-of-Day Verification** – a walk around of all lab departments to confirm that all microscopes are working well and that any adjustments are acceptable.