



K-SERIES PRECISION X-Y STAGE COAXIAL KNOB ASSEMBLY & DRIVE BAR ADJUSTMENT INSTRUCTIONS

Knob Assembly Removal

To remove the knob assembly from the stage it is necessary to remove the stage from the microscope. Once it is removed, place the stage upside-down on a soft surface to prevent scratches. Loosen the 4-40 flat head cam retaining screw on the underside of the top plate and turn the cam until the slot in the cam is at the other side of the screw from the drive bar.

Remove the two socket head screws from the rear drive bar retaining block on the underside of the bottom plate. This frees the Y-drive bar. Loosen the 5-40 set screw in the small control knob (#19-2014-09) and pull the knob off. Next, pull off the large knob (#19-2016.05). Loosen the 6-32 set screw in the edge of the middle-frame to remove the center axle (#19-2014.07). If the X-drive bar has been loosened sufficiently, the X-drive wheel (#19-2014.01) will come out with the axle. **AVOID USING EXCESSIVE FORCE – DO NOT USE PLIERS.**

If necessary, clean all parts and lubricate with special knob lubricant (Semprex P/N 19-8400); otherwise, place all parts on a clean hard surface to avoid contamination of the lubricant. Using other than the recommended lubricant will lead to unsatisfactory performance and possible galling of the X-axis small drive shaft.

Knob Assembly Installation

To re-install the X-axis drive wheel (#19-2014.01), it is best to first insert it through the hole in the center-frame. Engage the groove with the drive bar edge and then insert the axle. Avoid pushing the axle (#19-2014.07) too far through the frame so it does not exert pressure on the small X-axis drive wheel and drive bar. When the axle is properly inserted, begin to tighten the 6-32 set screw in the frame. While tightening the screw, move the axle up and down to assure that the screw contacts the axle in the retaining groove of the axle and not on the outside surface. Tighten securely. Install the large knob and the small knob, again ascertaining the screw engagement with the groove in the small axle.

Drive Bar Adjustment

Re-install the drive bar of the Y-axis. Test the drive knob for slippage. The knob controls should be slipping when the stage plates are held and the knobs are turned. The Y-axis drive bar retainers have adjusting screws in the edges towards the middle of the plate. These screws can be adjusted for sufficient friction between bar and drive wheel. **AVOID EXCESS PRESSURE. THIS WILL BREAK THE DRIVE WHEEL.**

The X-axis drive bar is adjusted by turning the cams (#19-3026) with a flat blade screwdriver. When proper pressure is reached, lock the 4-40 socket flat head screw. Proper tension is reached when the frictional drag is equal and sufficient to move the stage at $\frac{3}{4}$ inch from both end stops of the stage travel.