Leitz Diaplan Microscope Motor Drive Installation

This procedure steps you through the installation and alignment of the ASI motor drive onto the Leitz Aristoplan or Diaplan microscope.

The following tools are required for this procedure:

- small Phillips screwdriver
- medium slotted screwdriver
- 1.5mm hex wrench (provided)
- 7/64” hex wrench (provided)

Motor Drive Installation

The ASI z-axis drive attaches and drives the fine focus shaft of the microscope. The drive assembly is secured to the microscope via a custom ASI backplate that mounts to the microscope utilizing the six pre-tapped holes that secured the original backplate. Precise alignment of the ASI drive onto the fine focus shaft of the microscope is accomplished through a dual axis sliding adjustment bar. Installing the ASI drive assembly involves six steps. **Note that the terms left and right refer to the sides of the microscope as viewed from the front.**

Step 1 - Removing the UV and tungsten lamp housing and accessories

Remove the tungsten and UV lamp housings as outlined in the Leitz manual. If a dual port illuminator adapter is used remove the adapter by removing the two screws that secure it to the microscope. These screws are located inside of the adapter assembly.

Step 2 - Removing the original backplate and installing the custom ASI backplate

Remove the original backplate by removing the six philipshead screws that secure it to the microscope. The top two screws also secure the top cover near the UV illuminator port. These two screws must be removed as the backplate has a lip that slides under the top cover. Locate the custom ASI backplate shipped with the ASI motor drive components and install it in place of the backplate just removed. Use the screws provided with the ASI backplate rather than the ones that secured the original backplate. Orient the ASI backplate so that the extension protrudes from the bottom left.

Step 3 - Removing the left fine focus knob and installing the ASI motor assembly

Remove the left fine focus knob by loosening the 1.5 hexhead setscrew that secures it to the fine focus shaft and pull the knob straight off of the shaft. Locate the motor assembly shipped with the ASI motor drive components. Remove the two slotted screws and lock washers located on the rear adjustment plate of the motor assembly. Loosen, but do not remove, the y,z adjustment screw located on the side of the motor assembly. When y,z adjustment screw is loosened the motor plate will slide along the y and z axis in reference to the rear adjustment plate. Loosen the clamp on the hollow end of the drive shaft which protrudes from the black encoder on the inside of the motor assembly. Facing the rear of the microscope hold the motor assembly in your right hand. Position the hollow end of the drive shaft (protruding from the black encoder) over the fine focus shaft on the microscope. Orient the motor assembly so that the two shafts are aligned, then push the motor assembly onto the microscope as far as it will go. When the hollow drive shaft is completely over the fine focus shaft the small lip on the adjustment plate should butt up against the right side of the arm that extends from the backplate. While continuing to hold the motor assembly in your right hand position the adjustment plate to align the lip on the outer edge of the backplate arm and center the adjustment plate so that the two screws and lock washers previously removed can be installed to secure the adjustment bar to the backplate. Remove the two 4/40 threaded standoffs and lockwashers from the backplate arm and use them to secure the 9 pin D connector in the slot provided.

Step 4 -Aligning the drive

Carefully position the motor assembly along the y and z axis while rotating the right fine focus knob until minimum drag is felt. Tighten the screw securing the adjustment plate to the motor assembly. Tighten the clamp securing the drive shaft to the fine focus shaft using the 7/64” hex wrench. Recheck for minimum drag on the fine focus shaft by turning the right fine focus shaft. Repeat alignment procedure if necessary.

Step 5 - Installing the focus lock extension shaft

Tighten the focus lock knob by turning it clockwise. Remove the focus lock adjustment knob by loosening the setscrews that secure it to the shaft. Install the ASI extension knob and shaft assembly. The extension shaft should protrude through the hole in the motor assembly. Turn the extension shaft clockwise until the stop on the extension knob engages with the stop on the microscope. Tighten the setscrews to secure the replacement extension knob onto the focus lockpulley shaft.

Step 6 - Installing the cover

Remove the screws from the edges of the drive assembly. Locate the ASI coverplate. Place it in position over the motor drive assembly and secure it with the screws just removed. Place the left fine focus knob over the protruding end of the drive shaft and secure it in place with the original screw using the 1.5mm hex wrench. Place the plastic knob over the protruding focus lock extension shaft

and secure it with the setscrews.

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