

[OLD]Leitz LaborLux S Microscope Motor Drive Installation

This procedure steps you through the installation and alignment of the DRV-Lablux-S motor drive onto the Laborlux-S 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)
- 5/32" hex wrench (provided)
- 0.05" 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 two 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 triple axis sliding adjustment bar. Installing the ASI drive assembly involves six steps:

Note: the terms left and right refer to the sides of the microscope as viewed from the rear of the microscope and assemblies.

Step 1 - Removing the UV and tungsten lamp housing and accessories and gaining access to the rear of the microscope.

Remove the tungsten and UV lamp housings as outlined in the microscopes manual. Turn the microscope so access to the rear of the unit can be easily obtained.

Step 2 - Removing the left fine focus knob (which is located on the right when viewing the microscope from the rear)

Remove the left fine focus knob by loosening the 1.5 hex head set screw that secures it to the fine focus shaft and pull the knob straight off of the shaft. Check to insure that no washers have come off with the fine focus knob. If any have install them back on to the microscope. There should be a small plastic gear that mates with a brass gear inside of the coarse knob assembly. This gear also has a small elongated part that protrudes onto the fine focus shaft. Insure that this gear is mating with the brass gear and rotate the left focus knob so that the elongated "nub" can be seen.

Step 3 - Removing the original backplate and installing the custom ASI backplate and motor drive assembly

Remove the original backplate by removing the two 3x20mm Philips head screws that secure it to the microscope. The plastic backplate will have to be bent slightly at the bottom in order to remove it. Before attempting to install the ASI drive and back plate loosen the following screws on the ASI backplate/drive assembly:

Use the 7/64" Allen wrench to loosen, but do not remove, the clamp that is on the slotted shaft that is located on the left of the black encoder when looking from the rear.

Use the 5/32 Allen wrench to loosen, but do not remove, the vertical and horizontal adjustment screws located on the back and right side of the drive. The drive should rotate freely in all axis before attempting to install the drive.

The drive/backplate assembly can be easily installed onto the microscope as a unit. **(When installing the drive be careful not to force anything into place. Great care should be taken as to not bend the fine focus shaft. Move the motor drive freely while installing it to insure that nothing binds.)** The hollow slotted shaft that protrudes from the encoder slides over the fine focus shaft. The backplate mounts onto the rear of the microscope using the original screws that secured the old backplate. Note that the bottom of the backplate should be inserted first. Once the backplate/drive assembly has been installed and secured with the original 3x20mm screws coupling and alignment of the mating shafts can be accomplished.

Coupling and securing the drive

Push in on the right fine focus knob with your left hand and rotate it while aligning the drive along the horizontal and vertical axis. Tighten the vertical and horizontal adjustment screws with the 5/32 Allen wrench at a location where no drag is felt on the fine focus shaft. Insure that the right fine focus knob is pushed in all of the way and that the white plastic gear is still engage with the brass gear. Loosen the two set screws located between the slotted shaft clamp and encoder with the 0.05" Allen wrench. While pushing in on the right focus knob slide the slotted shaft onto the fine focus shaft until the notch on the slotted shaft mates with the plastic "nub" that is on the white plastic gear. Tighten the two 0.05" set screws. Push the clamp on the slotted shaft in towards the microscope and tighten it securely with the 7/64" Allen wrench.

Step 4 -Aligning the drive

Carefully check the position the motor assembly to insure that no drag is felt other than the minimal drag of the gears. If any drag is felt loosen the vertical and horizontal adjustment screws and move the motor assembly along the , y and z axis while rotating the right fine focus knob until minimum drag is felt. Tighten both the vertical and horizontal adjustment screws at the position where minimum drag is felt. 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 cover

Remove the screws from the edges of the drive assembly. Locate the ASI cover plate. 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 set screw using the 1.5mm hex wrench. Insure that the knob does not rub against the cover and that the set screw mates with the flat on the protruding shaft. The cover may be pushed in towards the microscope to allow for clearance if required.

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