Leica DMIRB Microscope Z Drive Installation Procedure

The procedure below outlines the steps necessary to install the ASI Microscope Focus Controller Drive onto the Leica DMIRB microscope.

To perform the following steps you will need the following tools:

Medium flat blade screwdriver
1.5mm, 3mm, 1/16, 5/64 and 7/64 inch hex wrenches
ASI provides the hex wrenches.

The procedure has three parts:

1) Removing the left fine focus knob
2) Installing the baseplate, and aligning the motor drive assembly.
3) Installing the motor drive cover plate & fine focus knob.

Part 1 - Removing the Left Fine Focus Knob

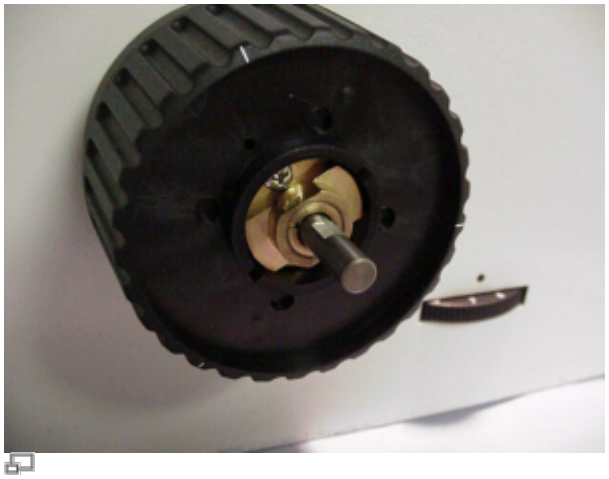

Figure 1. Left Fine Focus Knob Removed

Remove the left fine focus knob from the microscope as follows:

a) Use the 1.5mm Allen wrench to loosen the setscrew located on the fine focus knob and pull the knob off of the microscope

Part-2 Installing & Aligning the Motor Drive

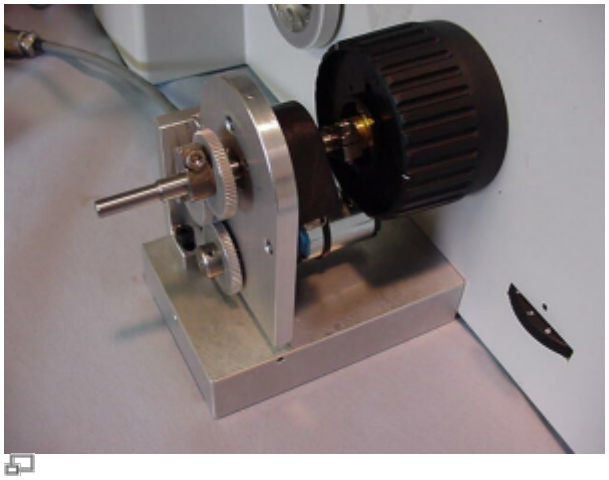

Figure 2. ASI Drive Installed on Leica DMIRB Microscope

Installing the Drive

The ASI motor drive attaches to the silver horizontal adjustment bar that is attached to the base plate. The motor drive slides within two lips on either side of the horizontal adjustment bar so that it can slide along the vertical axis and is secured to the adjustment bar via two 4/40 vertical adjustment screws. The adjustment bar is secured to the baseplate with a 4x12mm horizontal adjustment screw. The horizontal and vertical adjustments allow the drive to be correctly positioned so the drive shaft on the ASI motor drive can be slid over the fine focus shaft of the microscope.

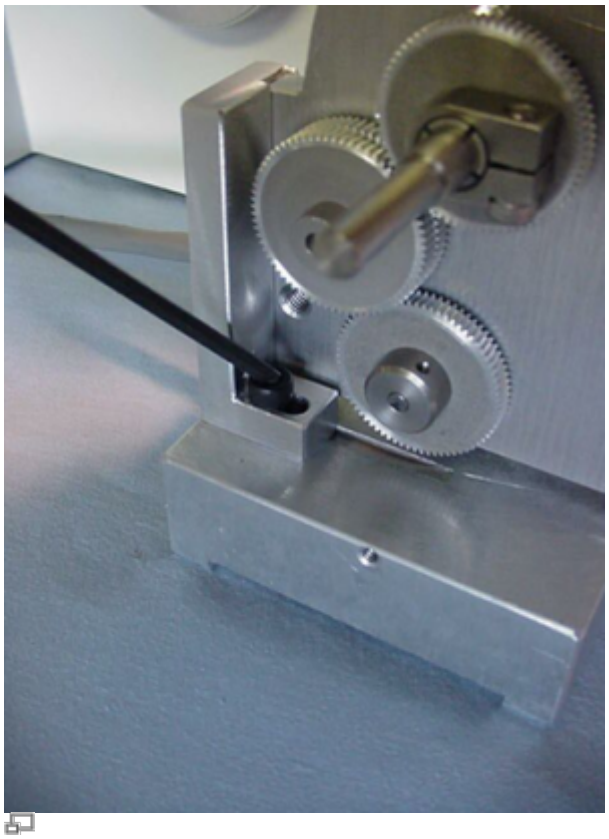

Figure 3. The Horizontal Adjustment Screw

a) Locate the base plate, the motor drive, adjustment bar, and the Allen wrenches. Use the 3mm Allen wrench to remove the drive assembly from the base plate by removing the horizontal adjustment screw as shown in figure 3.

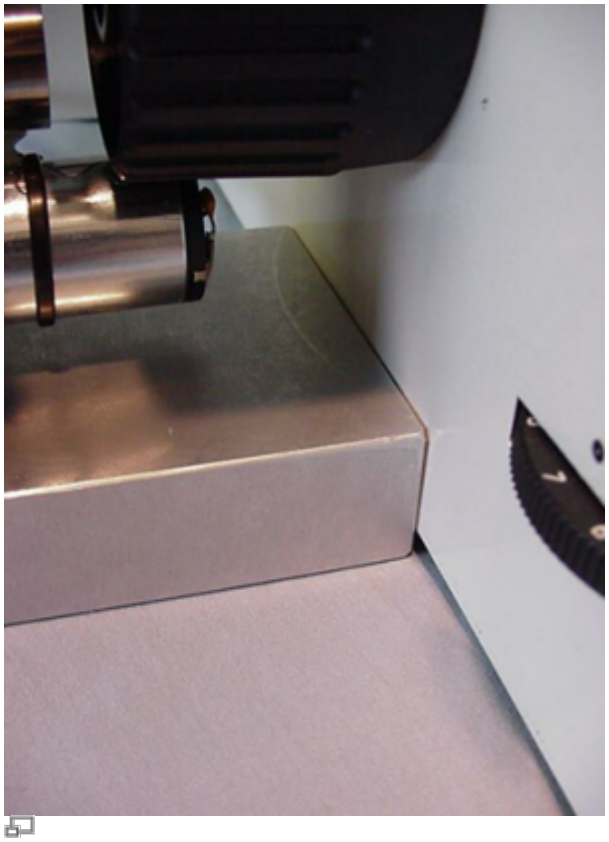

Figure 4. Base plate should be flush with the side of the microscope and about center under the focus knob.

Figure 5. Clamp to tighten base plate to the microscope.

b) Slide the baseplate assembly under the microscope until the baseplate is about centered under the focus knob. Insure that the base plate is parallel with the bottom of the microscope. Position the base plate so that it is under the focus assembly as shown in figure 4.

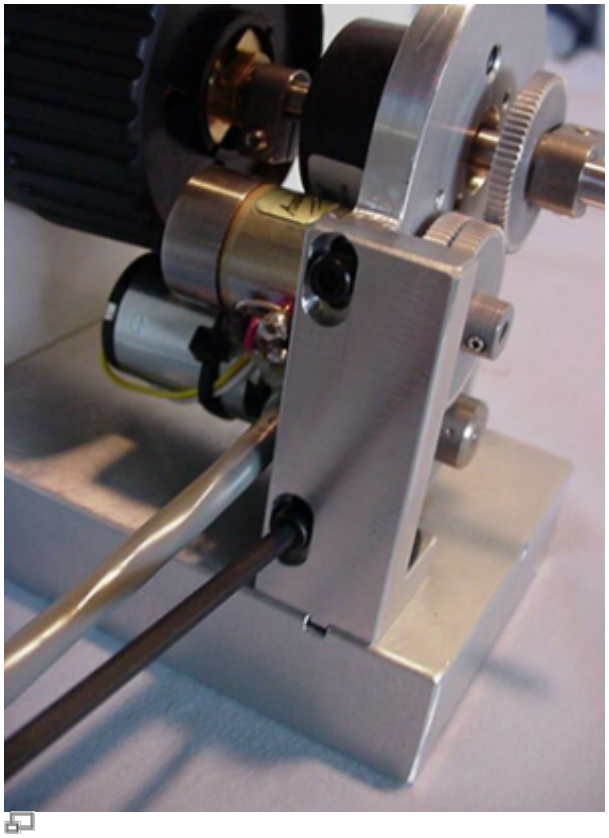

Figure 6. The vertical adjustment screws

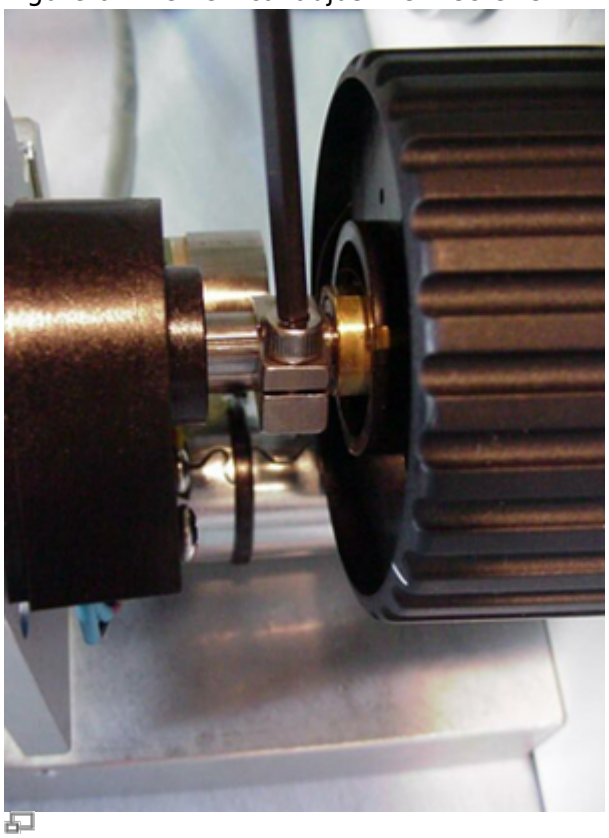

Figure 7. The drive shaft clamp

c) Locate the adjustment bar, and the motor drive. Use the 7/64“ Allen wrench to loosen the vertical adjustment screws as shown in figure 6. Use the 7/64 Allen wrench to loosen the clamp that is located on the ASI drive shaft as shown in Figure 7. This clamp is located at the end of the drive shaft as it protrudes out of the black encoder cover. Once the clamp is loose slide it back towards the encoder. While holding the right fine focus knob with one hand align the ASI drive shaft with the microscope’s fine focus shaft and slide the ASI drive shaft over the microscope’s fine focus shaft. If you do not hold

the right fine focus knob the microscope's fine focus shaft may be pressed over towards the right of the microscope. If this happens simply push the right fine focus knob in towards the microscope to push the shaft back.

d) Once the drive has been installed it should be attached to the base plate. The base plate that was installed in step b. may have to be repositioned slightly so that the adjustment bar will slide into the grove. Position the base plate so that the horizontal adjustment screw is about centered in the grove and screw in the horizontal adjustment screw as shown in figure 3. Do not tighten the screw, only screw it in enough to hold the drive to the baseplate. Leave both the horizontal and vertical adjustment screws loose enough so that the drive can slide up and down and the adjustment bar can slide back and forth within the baseplate.

e) Slide the ASI drive shaft clamp towards the microscope body as shown in figure 7, and use the 7/64 inch hex wrench to tighten the drive shaft clamp. Insure that this clamp is securely tightened or slippage may occur. Use the 5/64" Allen wrench to tighten the base plate clamp that is located on the right side of the microscope as shown in figure 5. Tightening this setscrew will cause the silver bar to press against the side of the microscope. Insure that the setscrew is securely tightened to hold the baseplate assembly in place.

f) Slide the motor drive up and down, forward and backward slightly while turning the right fine focus knob until it is in the position where minimum drag is felt on the right focus knob. Secure the motor drive into position by tightening the horizontal and vertical adjustment screws.

g) Recheck the alignment by noting the drag while rotating the right fine focus knob. No noticeable drag should be felt. If any drag is felt other than the slight drag of the gears loosen the vertical and horizontal adjustment screws with the 3 mm Allen wrench and move the drive in the x,y, and z-axis to a point where no drag is felt. Then tighten the vertical and horizontal adjustment screws. Note there should be no point through out the 360º rotation of the fine focus knob where an increase in drag is felt. If drag is felt repeat the above steps.

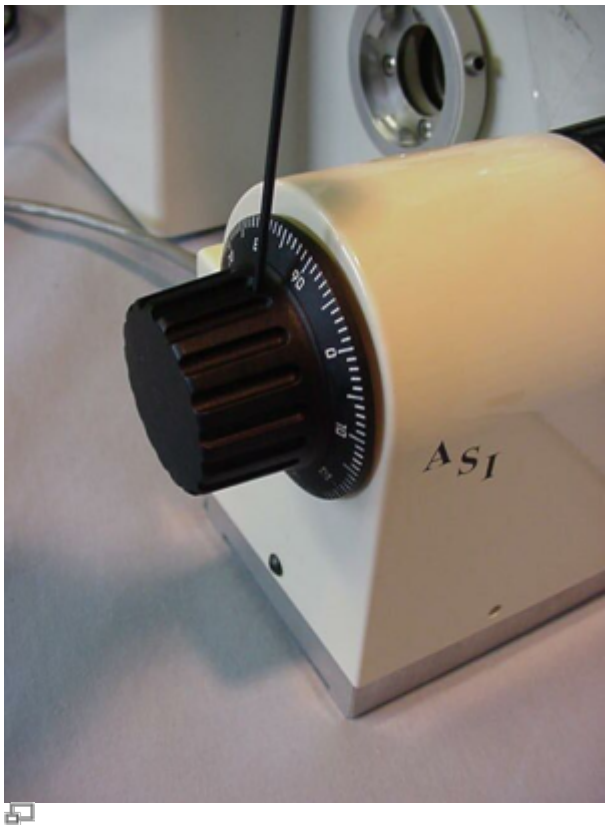

Figure 8. Installing the cover & the fine focus knob

Part 3-Installing the motor drive cover plate & fine focus knob

a) Locate the motor drive cover. Remove the 4/40 button head screws from the drive with the 1/16 “ Allen wrench. Position the motor drive covert over the motor drive assembly and secure in place using the 4/40 buttonhead screws.

b.) Slide the microscope's fine focus knob over the shaft and secure it in place by using the 1.5 mm Allen wrench to tighten the set screw. Please note that the knob should be positioned so that it does not rub against the cover.

leica, DMIRB, zdrive