Nikon SMZ-800/1000 Z-Axis & Zoom Flex-Drive Installation Procedure

The procedure below outlines the steps necessary to install the ASI Microscope Focus Controller Drive onto the Nikon SMZ-800/1000 microscope.

To perform the following steps you will need the following tools

1.5mm, 2mm, 2.5mm 4mm, and 7/64 hex wrenches The hex wrenches are provided by ASI.

The procedure has 6 parts

1. Removing the left fine focus knob & the left zoom knob
2. Installing the baseplate
3. Installing and aligning the Z motor drive assembly
4. Installing and aligning the Zoom motor drive assembly
5. Installing the motor drive cover plate & fine focus knob
6. Connecting the cables to the controller

Part 1 - Removing the Left Fine Focus Knob left Zoom knob

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

Figure 1: remove left fine focus & zoom knobs

Use 1.5mm Allen wrench to loosen setscrew on fine focus knob & two setscrews on left zoom knob. Pull knobs straight off.

Part 2 - Installing the Baseplate & the Z-axis drive

Locate the baseplate. If the motor drive is attached to the base plate use the 2.5mm Allen wrench to remove the horizontal adjustment screw to remove the drive from the base plate. Use the 2.5mm Allen wrench to loosen the two vertical adjustment screws as shown in figure 2.

Figure 2: Z drive removed and vertical adjustment screws being loosened

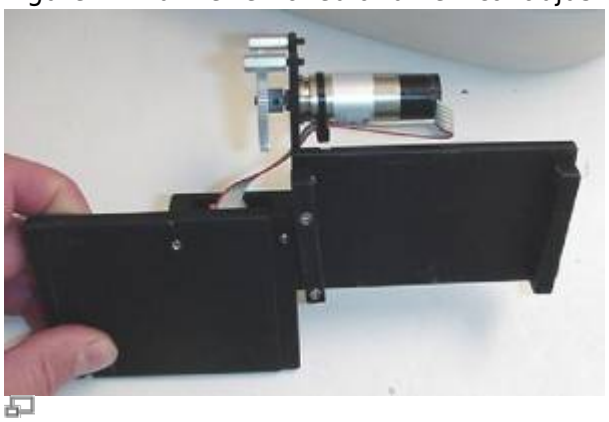

Figure 3: Base plate with Z dive removed, but with zoom motor installed

Install the base plate onto the microscope as shown in figure 4. Use the two 5X16mm socket head cap screws to secure the baseplate to the microscope as shown in figure 5 and tighten securely with the 4mm Allen wrench.

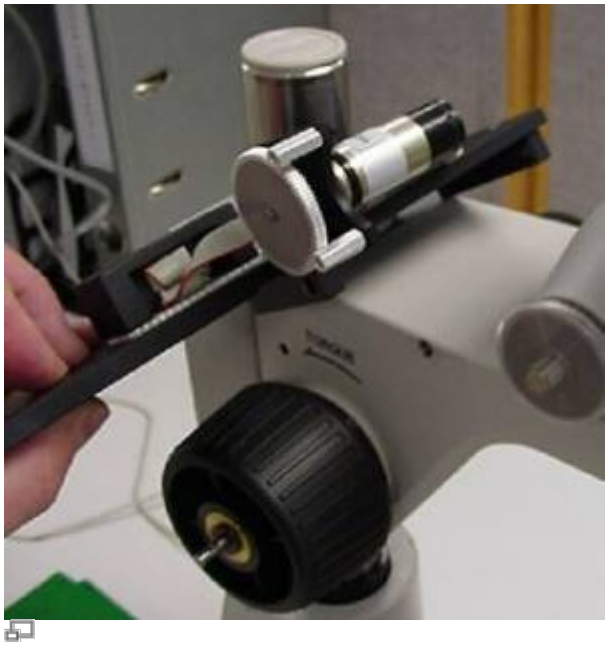

Figure 4: Installing baseplate

Figure 5a: Use the two 5X16mm socket head cap screws to secure the baseplate to the microscope

Figure 6: Install Z-drive over fine focus shaft.

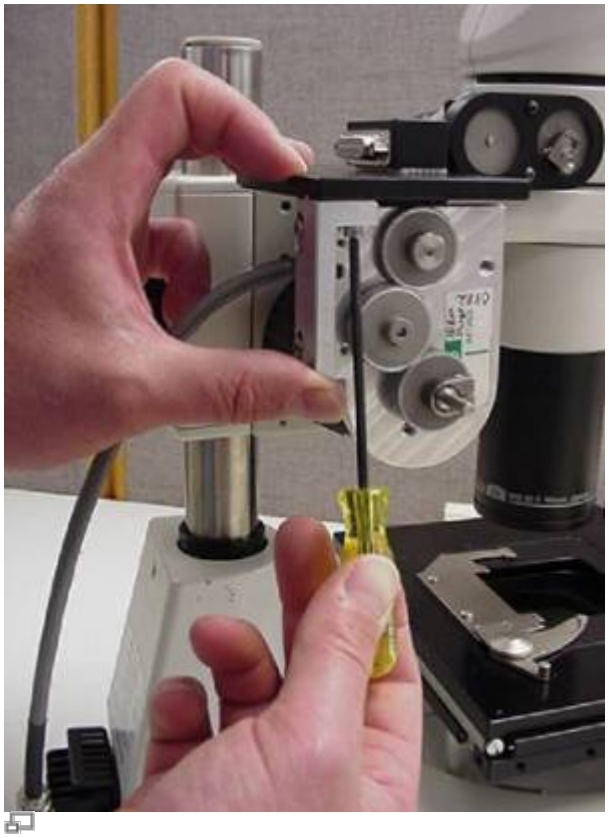

Figure 7: Align drive and install horizontal adjustment screw

Figure 8: Push drive clamp up against focus knob & tighten

Install the drive as shown in figure 6. Please note that there is a groove on the baseplate that the tab on the adjustment bar slides into. Secure the drive to the base plate with the horizontal adjustment screw as shown in figure 7. Push drive clamp up against focus knob & tighten as shown in figure 8. Please not that this clamp must be securely tightened to prevent any slippage. After the drive clamp has been securely tightened tighten the vertical adjustment screws as shown in figure 9.

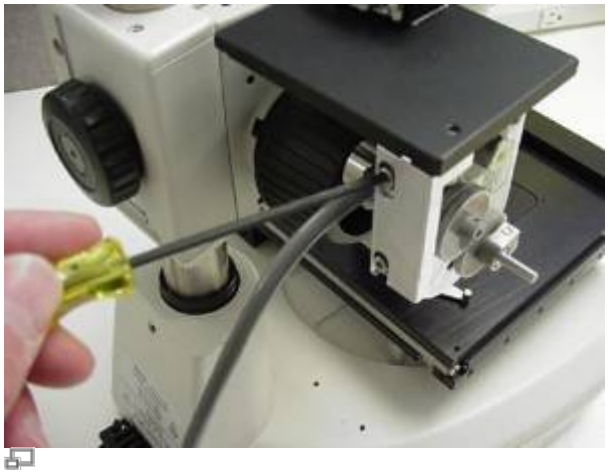

Figure 9: Tighten the vertical adjustment screws

Part 3 - Aligning the Motor Drive

Check the alignment by noting the drag while turning the right fine focus knob. No noticeable drag should be felt at any point with in the full 360 degrees of rotation. If any noticeable drag is felt loosen the Vertical & Horizontal adjustment screws and reposition the drive to a point where no drag is felt. Then hold the drive in place and tighten Vertical & Horizontal adjustment screws.

Part 4 - Installing and aligning the Zoom motor drive assembly

Locate the zoom gear and spacer as shown in figure 10. Install this assembly onto the zoom shaft as shown in figures 11 & 12. Align and secure the gears in place as shown in figures 13 through 16. Then install the cover as shown in figure 17. Please note that the zoom assembly of the microscope may need to be turned in the stand slightly as described in figure 14 to get the gears to mate properly.

Figure 10. Zoom gear & spacer

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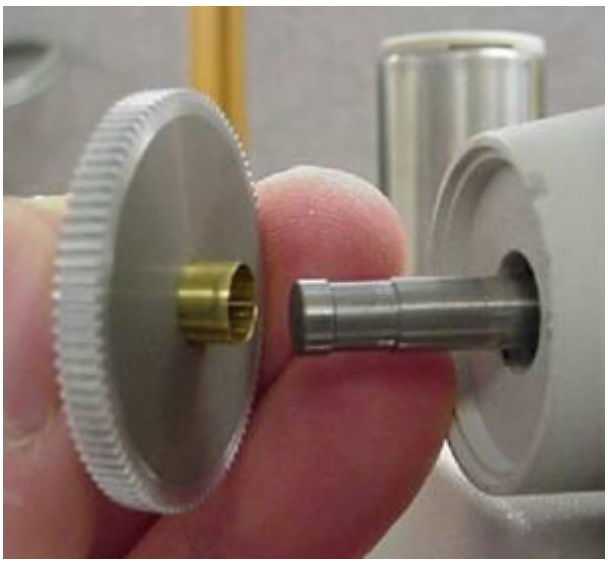

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Figure 12. The zoom gear should stick out a little

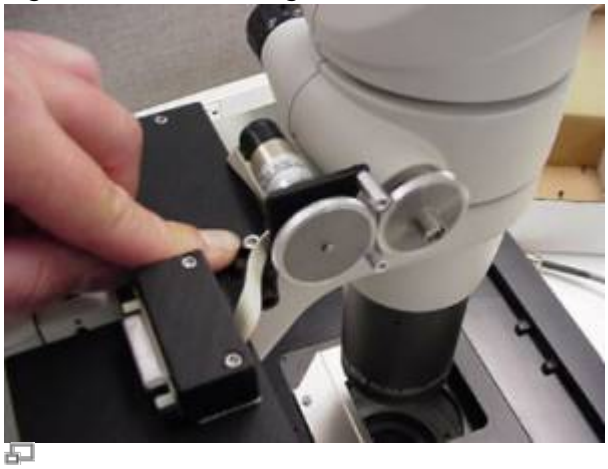

Figure 13. Loosen the screw that secures the zoom motor and press against the adjustment bar as shown so that the gears mate as shown in figure 14.

Figure 14. Gears properly aligned. . If the gears do not mate as shown loosen the thumbscrew that secures the zoom assembly to the stand, and turn the zoom assembly until the gears mate as shown. Retighten the thumbscrew when complete.

Figure 15. When gears are properly aligned use the 2.5mm Allen wrench to tighten the screw that secures the zoom motor.

Figure 16. Install the clamp onto the zoom gear and use the 7/64“ Allen wrench to tighten clamp / gear in place. Please note: clamp must be securely tightened to prevent any slippage

Figure 17. Check the alignment by noting the drag while turning the right zoom knob. No noticeable drag should be felt at any point with in the full 360 degrees of rotation. If any noticeable drag is felt loosen the Zoom assembly and realign it. If alignment is correct use the 2mm Allen wrench to install the cover as shown .

Part 5-Installing the motor drive cover plate & fine focus knob.

Install the cover and secure in place with the button head screws and the 2mm Allen wrench. Install the original fine focus knob as shown and secure in place with the 2mm Allen wrench. Please Note: that the setscrew in the fine focus knob should mate with the flat that is on the shaft.

This completes the procedure for installing the ASI motor drive on to the Nikon SMZ 800/1000 stereo zoom microscope

nikon, smz800, smz1000, zdrive