Nikon Eclipse TE 200/300 or Diaphot 200/300 Microscope Z Drive Installation Procedure

The procedure below outlines the steps necessary to install the ASI Microscope Focus Controller Drive onto the left-hand focus assembly of the Nikon Eclipse TE 200/300 and Diaphot 200/300 microscopes.

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

Medium flat blade screwdriver 1/16, 3/32, 5/64 and 7/64 inch Allen hex wrenches The hex wrenches are provided by ASI.

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 and fine focus knob.

Part 1 - Removing the Left Fine Focus Knob

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

a) Pull off the black rubber boot covering the fine focus knob. b) Remove the round slotted nut from the end of the knob using the medium slotted screwdriver. c) Remove the fine focus knob by grasping it firmly and pulling it straight off. **Do not turn** the knob to work it off, as this will damage the plastic alignment key molded into the knob.

Part 2 - Installing and Aligning the Motor Drive

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 6/32” vertical adjustment screws. The adjustment bar is secured to the baseplate with a 6/32” 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.

a) Locate the base plate, the motor drive, adjustment bar, and the Allen wrenches. Use the 3/32” hex wrench to remove the two screws holding the black & silver clamp assembly to the right side of the baseplate. Use the 7/64” hex wrench to remove the screw securing the adjustment bar to the left side of the baseplate, if it is attached, and remove the adjustment bar.

b) Slide the baseplate assembly completely under the microscope until the small stop plate located on the baseplate is completely against the left side of the microscope. This stop plate should be parallel with the bottom of the microscope. Position the base plate so that it is under the focus assembly.

c) Locate the adjustment bar, and the motor drive. Remove the vertical adjustment 6/32” hex screws

which are located at the rear of the ASI motor drive. Use the same 7/64” hex wrench to loosen the clamp that is located on the ASI drive shaft. 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.

d) While holding the microscope’s right fine focus knob, align the ASI drive shaft with the microscope’s left 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.

e) Locate the adjustment bar. Rotate the fine focus motor drive so that the rear of the drive aligns with the keys on the outside edges of the adjustment bar and the lip on the bottom of the adjustment bar mates with the groove in the baseplate. Align the holes on the adjustment bar to those on the drive and the baseplate. Screw in the vertical and horizontal adjustment screws to secure the drive to the adjustment bar and the adjustment bar to the baseplate. Leave the screws loose enough so that the drive can slide up and down and the adjustment bar can slide back and forth on the baseplate.

Aligning the Drive:

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. Slide the tab that protrudes from the ASI drive shaft clamp into one of the slots on the white plastic gear on the microscope focus shaft. This clamp is located on the drive shaft between the black encoder and the microscope, and was loosened in step c. Tighten the drive shaft clamp using the 7/64” hex wrench.

g) Recheck the alignment by noting the drag on the right fine focus knob. No noticeable drag should be felt. Repeat the steps above, if necessary.

Note: The clamp must be securely tightened or the drive may slip.

h) Reattach the black & silver clamp assembly that was removed in step a, to the right side of the baseplate. Once the assembly has been reattached, use the 5/64” Allen wrench to tighten the setscrew located in the middle of the clamp assembly. 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.

i) 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 7/64” hex wrench and move the drive around to a point where no drag is felt. Then tighten the vertical and horizontal adjustment screws. **Note: there should be no point throughout the entire 360º rotation of the fine focus knob where an increase in drag is felt. If drag is felt, repeat the above steps.**

Part 3 - Installing the Motor Drive Cover and 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 cover over the motor drive assembly and secure in place using the 4/40 button head screws.

b) Slide the microscope fine focus knob over the shaft extension and press it on all the way so that the plastic tabs on the knob mate with the slots on the ASI drive shaft. Install the small round nut in the end of the fine focus knob and tighten it with the medium slotted screwdriver. Slide the black rubber boot over the fine focus knob.

This completes the procedure for installing a left-hand ASI motor drive on to the Nikon Eclipse TE 200/300 and Diaphot 200/300 microscopes.

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