Olympus IX70 Linear Encoder Installation

The procedure outlines the steps necessary to install and align the ASI Heidenhain linear encoder onto the Olympus IX70 series microscopes. The linear encoder mounts to the rear of the microscope's objective turret mechanism via an encoder clamp. The linear encoder has a plunger that depresses into the encoder as the focusing position is moved. The plunger tip will either mate with the rear lead screw cover on an ASI automated XY stage or the microscope's original stage. The linear encoder installation has two parts:

1. Installing the encoder clamp
2. Installing and aligning the encoder

The procedure requires the following Allen wrenches that are supplied with the unit:

- 2.5mm
- 3/32"

Step # 1 Installing the encoder clamp

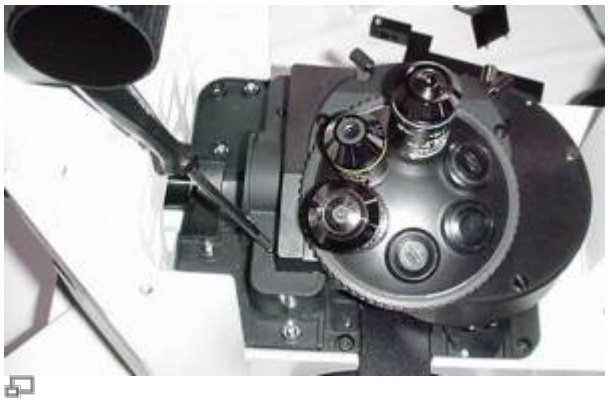

Figure 1a. Removing original screws

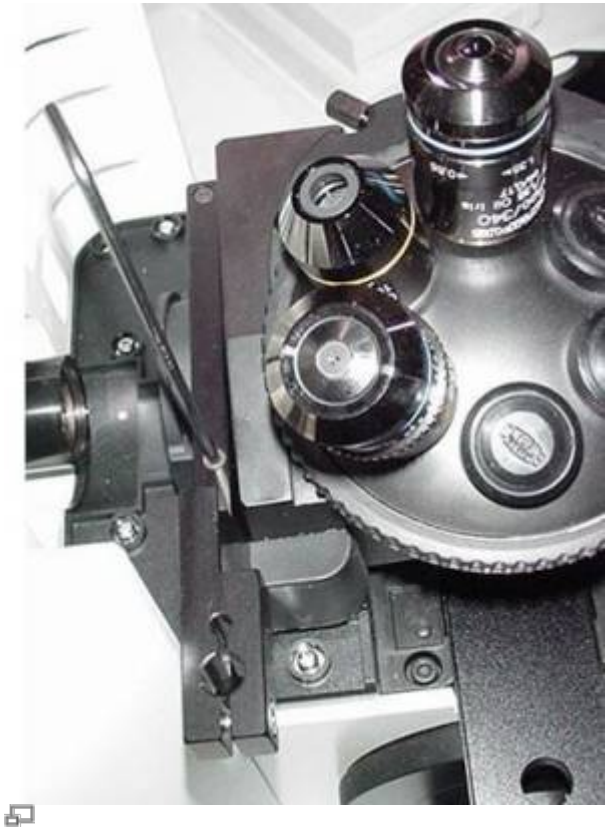

Figure 1b. Encoder clamp installed

To install the linear encoder the original stage must first be removed; please refer to your microscope's manual if needed. After the stage has been removed locate a Philips screw driver and use it to remove the two original screws that secure the cover at the rear of the turret as shown in figure 1a. Then locate the encoder clamp and position it across the objective turret mechanism of the microscope as shown in figure 1b. Use the two 3×25 mm screws and 2.5 mm Allen wrench to secure the unit in place. The encoder can be installed as shown, or installed in step two. If the encoder is installed as shown be sure to move the encoder down to allow room when mounting the stage.

Step # 2 Installing & Aligning the Linear Encoder

Please note: If you purchased the MS-2000-XYZ-LE unit with an automated XY stage the plunger will engage with the rear lead screw cover on the XY stage. The XY stage should be installed as outlined in this manual before continuing on. If you are using a standard Olympus stage the encoder plunger mates with the bottom of the existing stage.

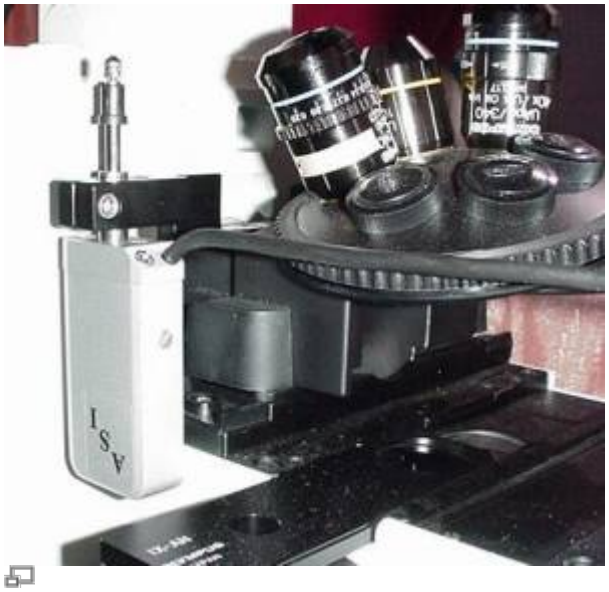

Figure 2a. Linear Encoder and stage mounted

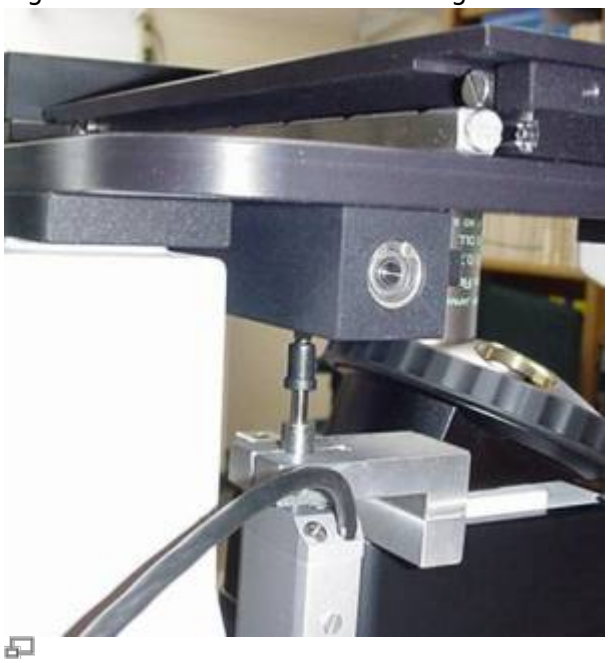

Figure 2b. Encoder engaging lead screw cover.

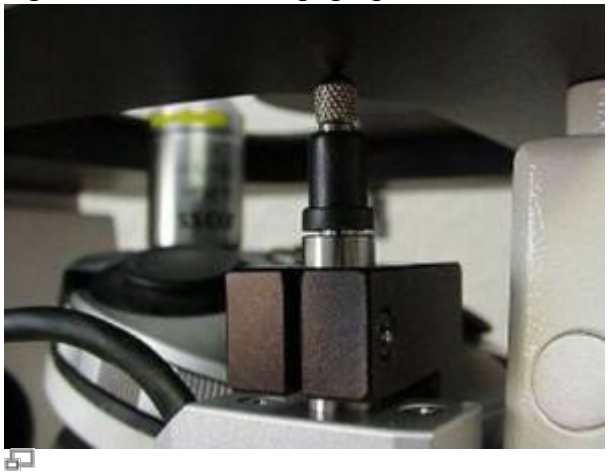

Figure c. Encoder alignment

Locate the Heidenhain encoder and the 3/32 inch allen wrench. Use the Allen wrench to insure that the screw on the side of the encoder clamp is loose. Bring the objective up to the upper most position. Slide the encoder into the large hole on the encoder clamp and position it so that the ball on the end

of the encoder's plunger mates with the lead screw cover as shown in figure 2b. If you are using a standard Olympus stage the encoder plunger mates with the bottom of the existing stage as shown in figure c. Slide the encoder up until there is about 1 to 2 millimeters worth of upward travel left on the encoder's plunger as shown in figure d. Secure the encoder in place by tightening the clamp screw with the 3/32 inch Allen wrench.

Please note that the encoder has a total travel of 12 mm and that it should be positioned to allow the most convenient travel distance for the stage. In most instances the downward movement of the objective of has the longest travel distance. In these applications the above installation procedure will provide the optimal travel range. However, this may vary slightly depending on the application and objectives use. Since the IX70 only has about 10 mm worth of object travel the above procedure should work in nearly every application.

WARNING! Please do not move the stage outside of the linear encoder's range without first disengaging the drive, selecting the rotary encoder, or removing power from the controller. Failure to do so could result in a runaway condition. There is a firmware safety feature within the MS-2000 that will limit the runaway time to 0.5 seconds. After this period the drive will attempt to return to the last known encoder position. If the position to the encoder is small the drive may find the encoder. However, if the position to the encoder is large, or movement commands away from the encoder are still being given the limited runaway condition can occur. Since the Axiovert only has about 10 mm worth of object travel this is usually not a problem.

This completes the installation and alignment of the ASI linear encoder onto the Olympus IX70 microscope. Please refer to your ASI manual for further instruction.

olympus, ix70, linear encoder, zdrive

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