

# Zeiss Axioskop linear encoder Installation

The procedure outlines the steps necessary to install and align the ASI Heidenhain linear encoder onto the Zeiss Axioskop microscope. The linear encoder mounts to the rear of the microscope via an encoder clamp. The linear encoder has a plunger that depresses into the encoder as the focusing position is moved. The plunger tip mates with a plunger stop that is attached to the microscopes stage carrier. The linear encoder installation has three parts:

1. Installing the plunger stop
2. Installing the encoder clamp
3. Installing and aligning the encoder

The procedure requires the following Allen wrenches that are supplied with the unit as well as a small slotted screw driver that is not provided:

- 1.5 mm
- 5/64"
- 3/32"

## Step # 1 Installing the plunger stop

The plunger stop mounts on the left side of the microscopes stage carrier using two 2×8 mm sockethead cap screws, and two of the existing tapped holes that are used to secure the carrier cover. Before installing the plunger stop the two small slotted 2x5mm screws that secure the left side of the carrier cover must be removed. These screws are located on the left side of the microscope just below the rear of the XY stage, and are used to secure the end of the metal cover. After using the screw driver to remove the two screws locate the plunger stop and position it on the left side of the stage carrier so that the two holes on the end of it align with the tapped holes for the screws that were just removed.

Use the two 2×8 mm sockethead cap screws and the 1.5mm Allen wrench to secure the plunger stop to the microscope as shown in figure # 1.

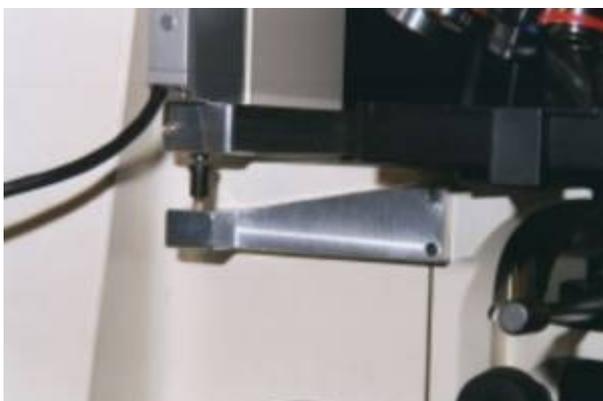


Figure 1



Figure 2

## Step # 2 Installing the encoder clamp

Bring the stage up to the correct focal position for the common objectives used. Locate the encoder clamp and position it across the throat of the microscope as shown in figure 2. The large slotted hole in the encoder clamp should go on the left side of the microscope and the silver press bar should go on the right side as shown. Position the encoder clamp so that it is pressed against the back of the microscope, and center the hole in the encoder clamp over the encoder plunger stop as shown in figure #2. There should be a small gap between the bottom of the encoder holder and the top of the stage carrier as shown in figure #1. Once the encoder clamp is correctly positioned use the 5/64 inch Allen wrench to tighten the set screw located on the opposite side of the silver press bar (see figure # 3). This will cause the silver press bar to press against the microscope and will hold the encoder clamp securely in place.

## Step # 3 Installing and aligning the encoder

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. Insure that the stage is at the correct focal position for the common objectives used. 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 triangular carbide plunger stop as shown in figure # 4. Slide the encoder down until there is about 1 to 3 millimeters worth of upward travel left on the encoder's plunger as shown in figure #1. Secure the encoder in place by tightening the clamp screw with the 3/32 inch Allen wrench.



Figure 3



Figure 4

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 upward movement of the stage/focus will only be a few millimeters from the focal plane. In these applications the above installation procedure will provide the optimal downward travel range. However, this may vary slightly depending on the application and objectives use.

To allow for the maximum upward linear encoder movement the stage can be moved to its upward mechanical stop and the encoder installed with the plunger fully retracted.



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

[zeiss](#), [zxioskop](#), [linear encoder](#), [zdrive](#)

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