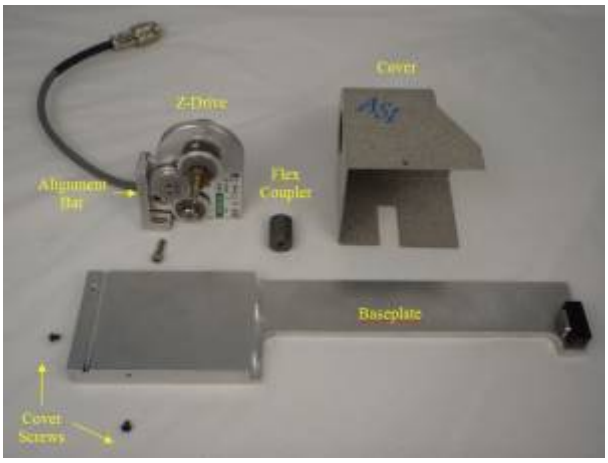
Nikon Eclipse L200N ASI Z-Axis Motor Drive Installation

This procedure steps you through the installation and alignment of the ASI's EL200 Z-axis motor drive onto the Nikon Eclipse L200N microscope.



The following tools are required for this procedure:

- Small Flathead Screwdriver
- 1.5mm hex wrench
- 2mm hex wrench
- 3mm hex wrench
- 7/64" Allen wrench (provided)

The procedure has three parts:

1. Removing the left fine focus knob
2. Installing flexible coupling
3. Installing and aligning the motor drive assembly and baseplate.
4. Installing the cover.

Note: the terms 'left' and 'right' refer to the sides of the microscope as viewed from the front of the microscope.

Part 1 - Removing the Left Fine Focus Knob

1. Remove rubber boot, if present. Remove the screw that secures the outer knob to the inner left fine focus knob with small flat screwdriver. Loosen set screw in knob if present.

Note the inner brass screw with the slot

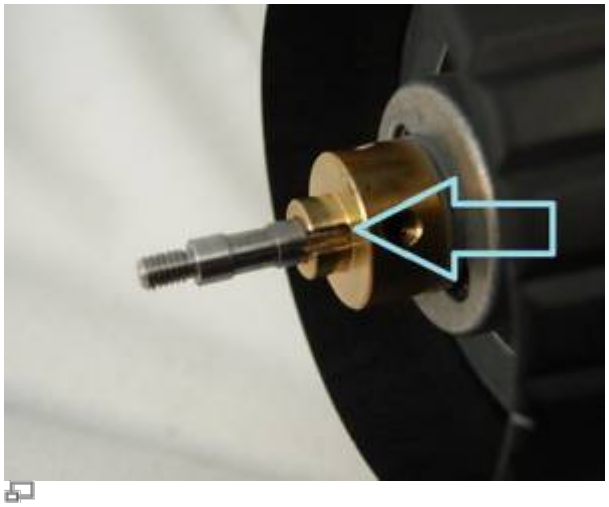
Hold the inner fine focus knob on the right hand side.

Use a flat head screwdriver to remove the inner brass screw.

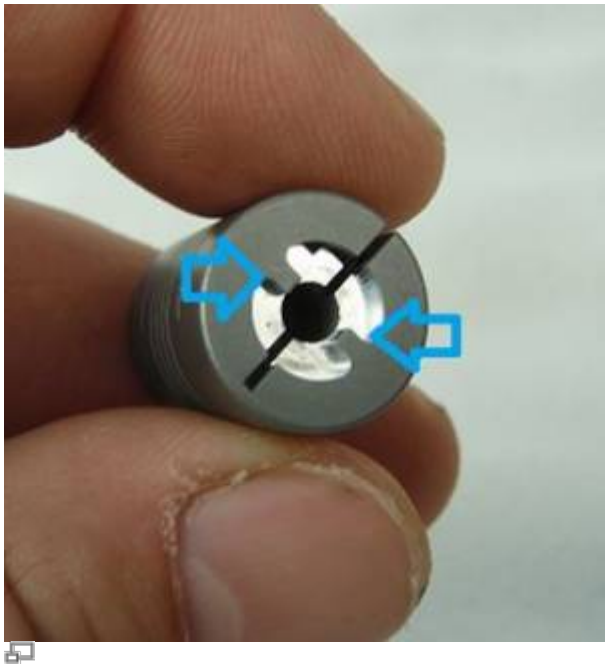
Carefully pull on the inner fine focus knob and remove it.

Warning! Do not rotate the knob till it is at least ¼” off of the fine focus post. Twisting the left hand knob while holding the right hand knob in place may damage the slot key on the knob.

Set the knob and screw aside in a place where they will not be lost.



Once the knob is removed, note the slot on the brass nut on the fine focus post.



The key on the flex nut will need to be aligned with the shaft slot.

Part 2 - Installing Flexible Coupling.

1. Align the key on the coupler with the slot on the shaft. While holding the right hand knob in place, press the coupler on firmly. Once the key and slot are aligned so that the coupler is all the way on. Ensure that it is pressed all the way against the brass part of the left microscope knob with the key and slot aligned, without pushing the right focus knob out on the other side. Tighten the clamp on the microscope end with a 2 mm hex wrench. Check for any play in the focus shaft by pushing and pulling the focus knob as shown on the left – no movement should be evident.

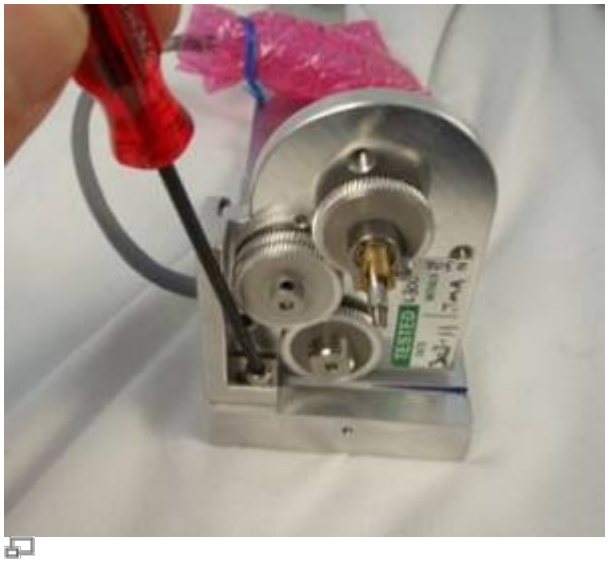
Align the key on the coupler with the slot on the shaft.

Slide flexible coupler over threaded end of fine focus shaft while holding right hand knob in place.

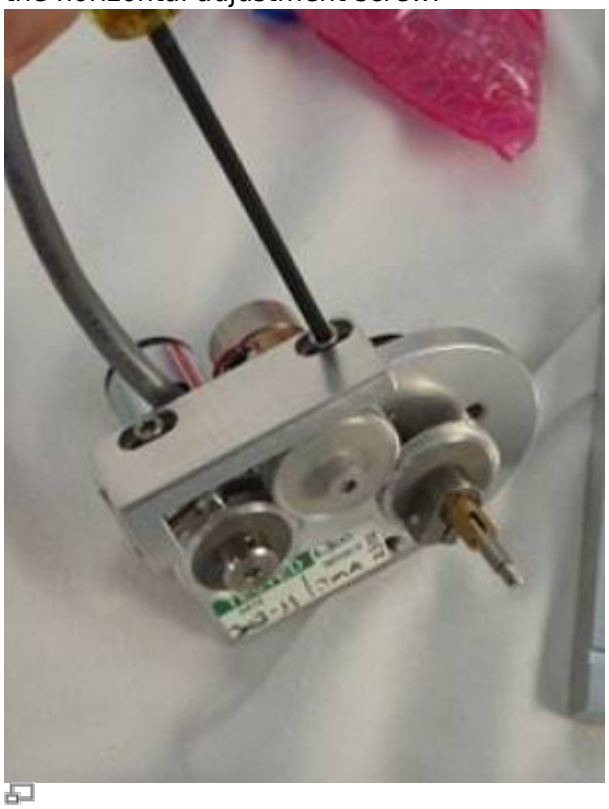
Ensuring the key is in the slot, hold the coupler tight against the shaft. Tighten clamp on flexible coupler with a 2mm hex wrench.

Part 3 - Installing and Aligning the Z-axis Motor Drive and Baseplate

1. If shipped assembled, use the 4mm hex wrench and disassemble the Z-drive motor assembly from base plate by removing the horizontal adjustment screw. At this time, also loosen the two vertical adjustment screws.



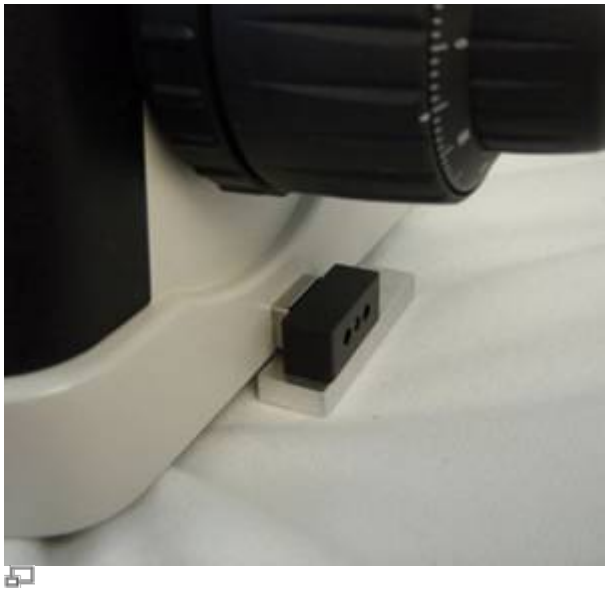
Remove motor drive assembly from base plate (if attached) by using the 3mm hex wrench to remove the horizontal adjustment screw.



Use the 7/64 inch hex wrench to loosen the two vertical adjustment screws.

2. Slide the baseplate assembly completely under the microscope as shown until the small stop plate located on the baseplate is completely against the side of the microscope. This stop plate should be parallel with the bottom of the microscope. Align the plate beneath the focus knobs.

Slide base plate under microscope and center beneath focus assembly.



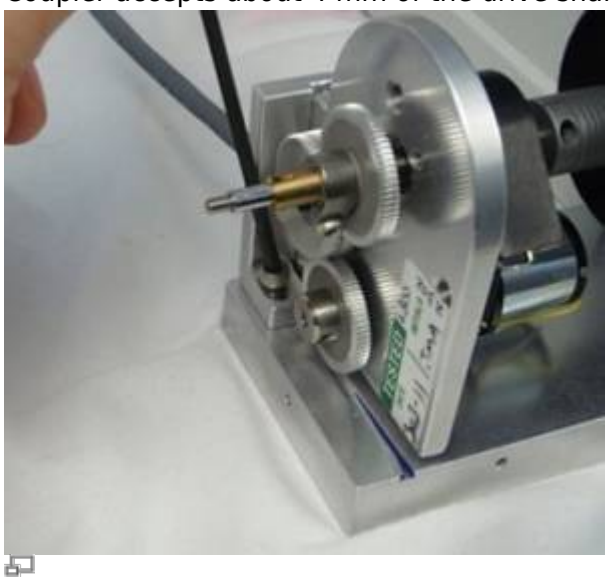
Leave base plate clamp loose at this time.

3. Leave base plate clamp slightly loose for later adjustment.

4. Slide the drive shaft of the motor drive assembly into the flexible coupler.

Slide the drive shaft into the flexible coupler.

Coupler accepts about 4 mm of the drive shaft.

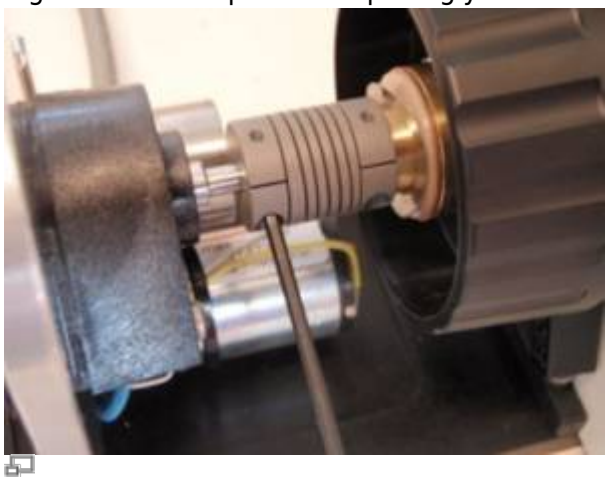


Reinstall the horizontal adjustment screw and tighten loosely for later adjustment.

5. Rotate the adjustment bar so that 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, and screw in the horizontal adjustment screw to hold the drive assembly in place using the 3mm hex wrench. Leave the adjustment screws loose enough so that later the drive can slide up and down and the adjustment bar can slide back and forth within the baseplate.

6. After verifying the baseplate and motor drive is appropriately positioned under the microscope, snugly tighten the baseplate clamp on the right side of the microscope. Use the 1.5mm hex wrench to tighten the setscrew located in the middle of the clamp assembly as shown. Tightening this setscrew will cause the silver bar to press against the side of the microscope. Ensure that the setscrew is securely tightened to hold the baseplate assembly in place.

Tighten the baseplate clamp snugly.



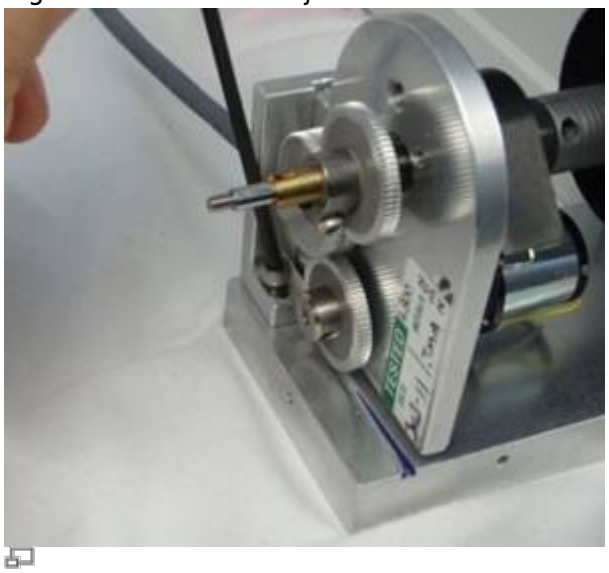
Tighten the flexible coupler’s clamp onto the drive shaft.

7. Tighten the clamp of the flexible coupler onto the drive shaft of the Z-drive unit using the 2mm hex wrench.

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

8. Lightly tighten the vertical and horizontal adjustment screws as shown. Since the motor is usually self-aligning, this should be a good position for the drive. Check the alignment by noting the drag while rotating the right-hand fine focus knob. No noticeable drag should be felt for the full 360º rotation of the fine focus knob. If any drag is felt other than the slight drag of the gears, loosen the vertical and horizontal adjustment screws and move the drive to a point where no drag is felt. Then tighten the vertical and horizontal adjustment screws.

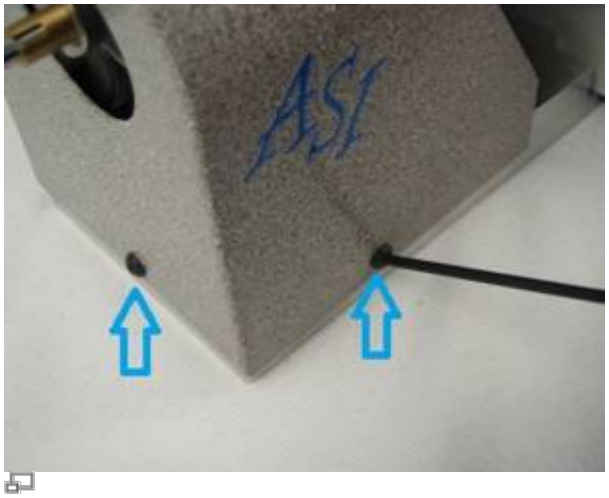
Tighten the vertical adjustment screws after alignment.



Tighten the horizontal adjustment screws after alignment.

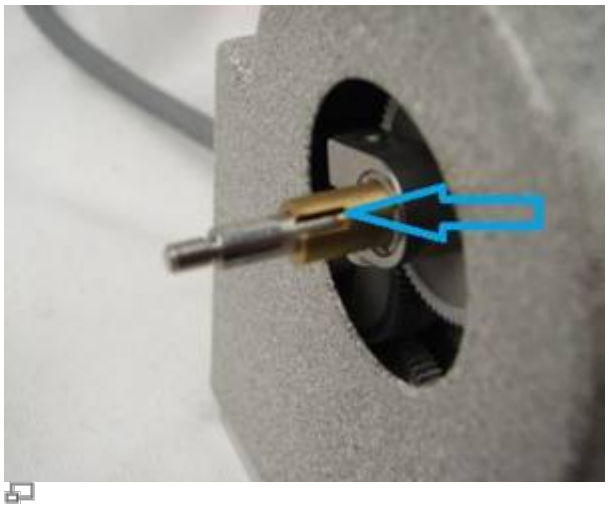
Note: there should be no point throughout the 360º rotation of the fine focus knob where an increase in drag is felt. If drag is felt, repeat the above steps.

Part 4 - Installing the Motor Drive Cover Plate and Fine Focus Knob



Install cover with screws as shown

1. Locate the motor drive cover. Position it over the motor drive assembly and secure in place as shown, using the two small cover screws with the 2mm hex wrench provided.
2. Note the slot on the brass part of the shaft. Carfully slide the microscope knob over the shaft so that they key on the knob falls into the slot in the brass section of the shaft so that the knob is snug against (but not touching) the cover.
3. Replace the small brass nut that was removed from the focus knob at the very beginning of the installation.
4. Use a Small flathead screwdriver to snug the brass nut on the shaft.
5. If there was an end cap or rubber boot, replace it on the knob over the brass nut.



Note slot in brass section of the shaft

After sliding on the knob, secure it with the brass nut and tighten it with a small flat blade screwdriver.

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This completes the procedure for installing the ASI Z-axis motor drive onto the Nikon EL200N.

nikon, l200n, zdrive